



FRIDAY, DECEMBER 14.

## Ball's Improved Automatic Truck.

The engravings represent a form of truck, manufactured by John Terbune, of the Automatic Truck Works, at Midland Park, N. J. These trucks are used for handling locomotives and car-axes, iron beams, girders and columns, bar-iron, cast-iron pipe, round and square timber, stone, shot, shell, etc. Various forms of tongs suited for the purpose are used for lifting these different objects. In fig. 1 the truck is represented in the position it occupies when about to take up a car-axe. The tongs *a a* are pivoted at *c c* and are pressed apart by a spring *s*. The shaft or tongue *b b* has a handle *d* on its back end by which it can be turned from the position shown in fig. 1 to that in fig. 2. The shaft, on its front end, has an elliptical shaped cam *e*. The shape of this is shown by the dotted lines at *e* in fig. 2. This cam works between the upper ends *f f* of the tongs. When the handle *d* is turned into a vertical position, as shown in fig. 1, the major axis of the cam is vertical, or it stands up edge-wise, so that the spring *s* can throw the lower ends of the

## The Mann Boudoir Cars.

Some of these cars have recently been placed on the line between New York and Boston. They are constructed with compartments and beds running cross-wise to the car and with a passage way on one side. Some of the compartments have two beds on one side, one above the other, and others have four beds, two on each side. In some cases there is a partition in the middle of the four-bed compartments, with a door, so that the two parts can be made to communicate with each other, or the one shut off from the other.

The merits and advantages are set forth as follows in a pamphlet published by the Mann Boudoir Car Company:

As already suggested, the cardinal merits of this system of cars are:

The division into compartments, or boudoirs, thus securing for travelers that privacy which, from the very nature of a sleeping car, is inestimably desirable, and the absence of which is so conspicuous in the ordinary palace car.

The placing of beds across the car, instead of lengthwise.

The elements which render them essentially "through cars"—i. e., while they are the most perfect and comfortable of sleepers, they are readily convertible into pleasant, luxurious, convenient and beautiful day parlor cars, all indications of sleeping arrangements disappearing. Without even discussing the merits of the ordinary sleeping-cars as night cars, no one who has made long journeys in them will deny that, with their narrow seats, low backs, hard, narrow arm-rests, low windows, heavy, overhanging beds, absence of hand-baggage racks, etc., etc., they are the most uncomfortable, etc., etc., they are the most uncomfortable

movable sofa cushions of proper size and form serve as armrests. These sofas are athwart the car, and under them and behind their inclined backs are carried the mattresses and bedding.

Thus the chief weight is near the floor, a feature which all who have practical knowledge of these matters will at once recognize as eminently advantageous. The enormously heavy palace-car bed, hinged up near the roof, rendering the car unstable and *top-heavy*, and shutting off half the window space, is entirely dispensed with. Along the wall of the car, over the windows, is placed a commodious rack to hold hand-baggage, and on the other side is a neat hat, umbrella and cane rack. Thus all these articles, which in the ordinary sleeping-car serve to encumber the floor, seats and beds, can be conveniently stowed out of the way and safe against loss or injury. At night the backs of the sofas, hinged at their tops to the cross partitions which completely separate the rooms, are swung out and up to a horizontal position, where, automatically fastening themselves, they form the upper beds, the sofa-seats becoming the lower beds.

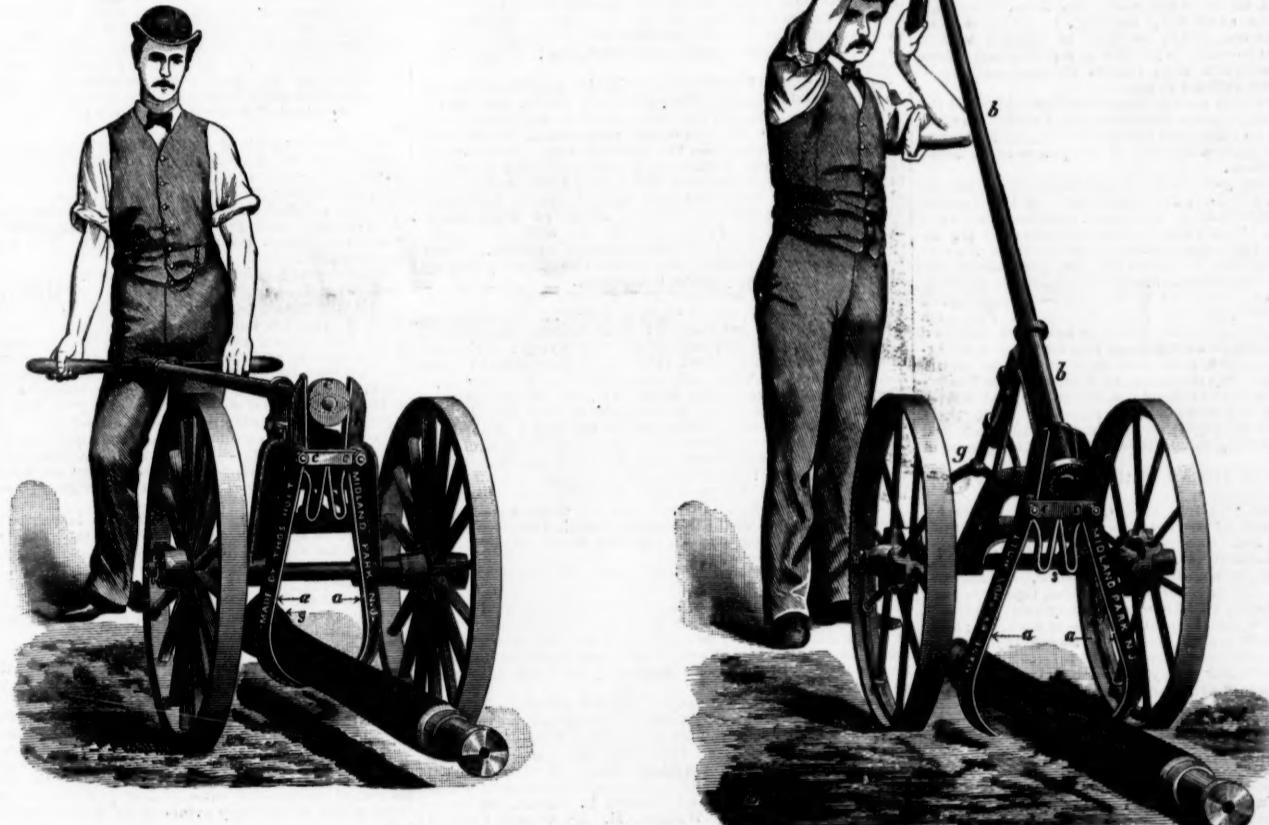
With the addition of bedding, two wide beds are made up from each sofa—one lower and one upper.

The beds are longer than those of the palace car, and the head is made up to the corridor partition, bringing the vital parts of the body near the middle of the car—a far safer position than along the side of the windows.

In beds so arranged across the car, the sleeper avoids the rolling motion experienced in beds placed longitudinally, while the head is removed from the noise incident to close contact with the car wheels.

This is a consideration more grave than would at first appear. It is plain that, in order that sleep should be sound and restful, the body must be as quiet as possible, and the muscles relieved from all tension. In beds placed length-

BALL'S IMPROVED AUTOMATIC TRUCK.



tongs apart, and then by raising up the handle and thus lowering the tongs, the latter are in such a position that by simply turning the handle *d* and shaft *p*, the cam *e* is brought into a position with its major axis horizontal, as shown in fig. 2, the upper ends of the tongs are thus spread apart and the lower ends brought together so as to grasp the axle or other object. At the back end of the truck is a forked bearing *g*. If now the tongs take hold of the axle somewhat back of its centre of gravity, the tendency will be, when it is raised, for the front end to tip downward. By bringing the handle down to the position in fig. 2, the forked bearing *g* is brought down so as to rest on the axle, and thus prevent the back end from raising, or the front end from drooping down. It is thus supported securely by the tongs and the forked bearing, and can be moved about anywhere that the truck can be rolled on its wheels.

Axles and other objects can be picked up and laid down as quickly as this sentence can be read, and it is immaterial whether they are hot or cold.

Two kinds of wheels are used for these trucks; one kind is made of iron, shown in fig. 1, and the other is Sarven's patent wooden wheel, shown in fig. 2.

A special form of truck is also made for handling car-axes with the wheels on them.

It is claimed that in handling axles, etc., a great deal of labor is saved by the use of these trucks, and that one man can move loads of 800 to 1,000 lbs. with them with ease and rapidity. They are used in some of the largest establishments in the country, including the Baldwin Locomotive Works in Philadelphia.

comfortable day-cars that the ingenuity of man directed to producing means of discomfort and torture could devise.

The perfect ventilation, without dust or air draughts, accomplished to a degree beyond criticism, by a system of which the company are the exclusive owners.

The substantial lessening of danger in case of accidents or fire.

In short, the cars are the embodiment of comfort and elegance. A more detailed examination will disclose the methods by which these various features are all combined in the boudoir car.

The cars are 64 ft. long, and in construction differ radically from the American cars. The trucks upon which they rest are of a special pattern, each having six 42-in. paper wheels, with Krupp's crucible steel tires. Steel and the best wrought iron are used throughout, in place of common iron and castings, producing greater strength with less weight.

The interior of the cars is altogether novel. At either end is a vestibule entered from the platform, from which open respectively ladies' and gentlemen's dressing-rooms and closets. The lavatories are supplied with every toilet appliance. The wash-tables are nickelated metal, which admits of the bowls being more than a half larger than in the marble tables ordinarily used. The bowls are emptied by a patent waste, avoiding the inconvenient plug and chain.

The luxury of a large bowl, a private room and an abundant supply of both cold and hot water, insuring a comfortable toilet on a cold morning, will be appreciated by railway travelers. The closets are in reality water-closets, thus avoiding the disagreeable odors incident to the system in use in this country.

Connecting the vestibules and shut off from them by doors is a commodious corridor running along the side of the car. Opening off this hallway by doors are several compartments or boudoirs. Some of these rooms are arranged for two, and some for four persons. By day these compartments are simply pretty cabins, with high, arched ceilings, large plate-glass windows and either one or two luxurious sofas, with high, soft backs, affording an easy head-rest;

wise of a car it is impossible to attain this condition of perfect rest. When in motion, all cars, however well constructed, are subject to more or less lateral oscillation, and this is greatly augmented by the ponderous monitor roof, heavy upper beds and other great weights high up from the rails, the effect of which, where the beds are arranged lengthwise, is a constant tendency to roll from side to side, to prevent which the muscles of the back and limbs are at all times more or less active and at work, though the sleeper be unconscious of the fact. From this results that tired feeling usually experienced after a night in the palace car. In rounding curves this disposition to roll is greatly aggravated.

It is also important to note in this connection that there exists no more fruitful source of colds, rheumatism, etc., in traveling than the practice in this country of sleeping along the car wall next to the windows, which in cool weather unavoidably admit more or less cold air, thus causing an inequality of temperature in the body; the side toward the windows is always chilly, while the other is warm. To sustain this theory it is only necessary to appeal to the universal experience of travelers.

The ventilation of the boudoir cars is by a novel system, without the dangerous air draughts and smothering dust from the windows in the clear-story roofs of American cars. This latter roof, which is a great top-weight and an element of weakness in construction, is superseded by a simple high dome, or Norman arch, constructed with light, strong, bentwood rafters or carlins, cailed inside and out, giving a stronger roof than the monitor form with less than half the weight. To effect the perfect ventilation which is one of the leading merits of the boudoir car, abundant air is taken in by large funnels located on the roof, and thence carried downward and forced through an ingenious filter, freeing it of all dust and cinders, after which it is discharged into the heater closet. In winter the fresh and purified air is thus heated, while in summer this heater closet and a portion of the filter-chest are converted into a huge refrigerator with ice. From this closet the air passes with considerable force

of current along a flue inclosing the heater pipes, down the entire length of the corridor, and is discharged into the latter through registers opposite the door of each compartment, which doors being provided with slats or louvres, admit the fresh heated (in winter) or cooled (in summer) air in great quantities to the compartments.

In summer this process of refrigeration effects a lowering of the temperature of the air from 12° to 20° below that of the exterior atmosphere. This item of comfort cannot fail of appreciation.

To complete the ventilating process, in each compartment are three exhausting ventilators, which, while they cannot admit air from without, constantly draw off the air from within. By this means all the air in the car is changed every five minutes, absolutely without draughts or dust. The importance of good ventilation in cars cannot be overestimated.

It should be mentioned that off the ladies' vestibule is a two-place boudoir always reserved for ladies travelling alone. In this ladies' boudoir a young girl might journey across the continent without escort with perfect propriety, and with the assurance of as complete seclusion as she might desire.

Connecting with the gentleman's vestibule are a smoking-room and buffet. From the buffet passengers can be supplied with a good, substantial breakfast, a light lunch, wines, beer, pure milk, tea, coffee, hot and cold drinks, etc. This system of buffet has always been a feature of the Mann boudoir cars in Europe, and, from its excellent management and the good quality of its supplies, has been most popular with travelers.

In each compartment are electric-bell communications to call the porter.

A handsome book-case in each car contains a carefully-selected library of one hundred volumes of light, current literature, in addition to the leading monthlies and illustrated weeklies.

The finest Wilton carpets, made into rugs between the sofas in the rooms and into a single runner in the corridor, are so laid that they may be quickly and easily removed daily for thorough cleanliness.

In speaking of cleanliness—really a most vital point in a sleeping-car—attention must be given to the construction of the sofas, from which the beds are formed. Both the backs and seats are so hinged that, without removing a screw, and with the facility that a chair could be moved, they may be taken off and out of the car, the bedding from the boxes removed, the window curtains readily detached, and, with the loose rugs, in a moment of time the entire room is dismantled, cleared to the bare walls and floor, without a crack, crevice, or even deep molding, to screen dust or vermin. The car can, it will be seen, be cleaned with a facility and completeness impossible in a palace-car, where the upper beds, with abundant hidden recesses, are fixed, and the carpets are difficult to remove.

In this connection it may be noted that the weight of the sofa back and bottom is less than the pair of seats alone in a section of the palace-car, and the entire weight of the ponderous upper bed against the roof of the palace car is saved in the boudoir system.

Without considering at greater length these numerous commendable points, the immense superiority of the boudoir car would be sustained alone by its provision for that very desirable privacy of one's home or hotel attained by the division into rooms fully separated by partition from floor to ceiling. Every traveler has observed the unavoidable exposure and exceeding inconvenience of dressing or undressing in a palace car, where it is necessary—to accomplish this with even bold immunity from the staring eyes of a score or more of strangers—to crawl in upon the bed and complete one's robing or disrobing as best may be done behind the curtains, which, as all well know, form but an imperfect screen. So objectionable, in fact, has this always been, that many ladies of refined and sensitive tastes utterly refuse to travel in the ordinary sleeping-car. Again, there is great annoyance at night by conductors, trainmen and way passengers passing to and fro between the long lines of curtains.

All of the above is avoided by the fully partitioned corridor of the boudoir cars.

The company feel confident that the system of interior decoration adopted by these cars has resulted in something far more tasty, rich and beautiful than ever produced hitherto in an American car. The entire interior is finished in a framing of amaranth wood, embossed, illuminated leather paneling, and upholstering of French tapestry.

The series of interior partitions necessarily and obviously strengthen the cars against crushing in case of accident; and, in case of fire would greatly retard its sweep through the car, which has so often been the cause of fearful loss of life. Furthermore, the greater safety of these cars in event of accident will be readily perceived when attention is directed to the fact that, should a car be thrown from the track headlong down an embankment, the occupants could not be dashed, as in the open cars, from one end of the car to the other, with the almost certain result of death. The division into compartments, the walls of which are padded with an inch of hair behind the leather paneling, limits the extreme distance through which one could be thrown to a few feet, and provides a soft contact. There are no corners, ends, projections, sharp edges, dangerous hooks or points in the car. All moldings are smooth, open, O-G in shape, and where wood is exposed it is in smooth, rounded form. In cases of accidents, overturning of cars, etc., the prominent seat-arms and sharp corners of partitions and moldings, in the ordinary car, cause most of the bruises and injuries to passengers. The dome form of roof, without glass, from which many injuries come, is also a great addition to safety in the boudoir car. A novel feature in the construction of the Mann boudoir is the complete enveloping of the walls and roof, under the outer sheathing, with a covering of paper nearly half an inch thick. This has two important effects: It prevents any heating of the interior of the car by action of a summer sun on the roof and walls—the paper is a very perfect non conductor of heat; in winter the cars are kept warmer for the same reason. Again, paper is a non-conductor of sound, and these cars are practically noiseless. To further insure this, the wall-space and the space between the several floors is filled with ground cork.

The dead weight of these cars per passenger carried is fully 15 per cent. less than that of the palace cars. This the company deem a vast recommendation to railway managers.

A special feature of the business contemplated by Mann's Boudoir Car Co. is that of supplying private cars under charter, like yachts, for long or short periods, to private persons or parties, to enable them to make journeys or tours with the comfort and luxury of railway princes who have their official cars. To this end several magnificent boudoir cars, on more or less different plans, to suit the wants of different charterers, are being constructed. The "Adeline Patti" is an example. This car has been secured by Col. Mapleson for the especial use of Madame Patti in her grand tour of 60 different cities, and will run in the special train of Mann boudoir sleeping-cars, chartered for the use of the Royal Italian Opera Company.

These private cars are fitted with luxuries never before

contemplated in railway vehicles; among other comforts are bath-tubs with hot and cold water.

From and after March, 1884, these cars may be had on hire for any desired period, and to start from any point on the railway system of this continent, on application to the company, whose office is in the Smith Building, Cortlandt street, New York.

#### George Francis Train's Reminiscences of the Union Pacific.

George Francis Train's speeches used to be seen almost daily, but now he has retired from the world to a bench in Madison square, New York, where every fine day his white head may be seen rising above a newspaper and usually surrounded by numbers of little children, with whom he is on excellent terms, while he usually refuses to speak to any adult male being. He has recently, however, come before the world again in a letter addressed to the *Omaha Bee* on the anniversary of the beginning of work on the Union Pacific, from which we take the following:

Yes, the whole programme was made over my table at 156 Madison ave. October, 1863. Dix was elected president! Cisco, treasurer, with 30 directors! These thirty formed an executive committee of seven! These seven appointed a contracting committee of three! [Dix, Bushnell and Durant.] This trinity made a contract with one [Hoxie]. From October 29, 1863, to May 25, 1869, Durant was vice-president [and everything else].

Durant! He is now in Adirondacks on his five-hundred-thousand acre forest! A hundred-million iron mine speculation when he finishes his road to Ogdensburg! I have \$100,000 there, or rather my children have! My personal fortune concentrates in a peanut!

Fraud? No! There never was so honest a transaction! As I made nearly every brick in the building, I ought to know if they were made of straw! The fact is the shrewdest capitalists had no faith in the speculation! Ask Macy? Guion? Ben Halliday? McCormick? and the American capitalists if it was not my psychology that magnetized those who invested their stamp? Moss Taylor, the twenty millionaire, had no confidence! Ask Stokes and Thorn! if I did not take \$100,000? Ask A. A. Low if he, too, did not refuse my offer? Ask Stokes (Phelps, Dodge & Co.) if he did not decline \$50,000 of this wonderful bonanza? Chittenden and Jay Cooke? Ask any of the long list of names who declined affair as "crazy speculation" to attempt, with so small subsidy, such mammoth enterprise! Nobody had faith!

To show how little faith one of the shrewdest men in New York, my father-in-law, George T. M. Davis, had in the Credit Mobilier, he sold my stock, much to my disgust, and his when he saw the dividends (as trustee), for 80 cents on the dollar! This settles the swindle idea. Nobody had faith in the Union Pacific as a safe speculation (or my father-in-law would not have sold what I knew was so valuable at 20 per cent. discount, a clear loss of \$200,000.) This was where psycho-vision was ahead of Wall street. But unless the Union Pacific pay me my million commissions, the road some day will be in receiver's charge. When I want stamps for peanut picnics with these little people on Madison square I may make Rome bowl.

I am willing to divide honors! Durant could not have built it without me, nor I without Durant! Nor either of us without Brooks in Congress! Nor Ames among banks! Casement with his ten miles day track-laying! Or, more important, the army of Irish laborers at one end and Chinamen at other! (After such work, why should Chinese go?) They did more than all the Kearneys! all the anti-Chinese connections combined to iron continent and save Pacific States to the Union.) Each played his part! No. New York will please stand aside! Boston raised the first money! After the wheels were oiled, New York, at usurous rates, kept up oil supply! In 1863 I saved company's notes from protest by loaning Union Pacific \$50,000! (See my check on city bank.) Yes. Durant was as much indebted to Ames as Ames to Durant in building road! One of his telegrams read, alluding to cash drafts on Boston to pay labor, "Durant draws like a jockey!"

Nat Thayer was too disgusted, because I turned him and Michigan Central Brooks out of directory, to speak to me. John Elliott Thayer was the man who suggested that my share in firm of Enoch, Train & Co., in 1852, should not be less than \$15,000! He was the only man that demoralized me on custom-house matters. I smuggled his silver banquet service ashore in the Ocean Monarch; but I did not know any better then!

Garfield's memory is at fault. I never mentioned Credit Mobilier to him; had no occasion for his service in Congress. Could not in any way use his legislative influence! He connects another transaction that took place in 1865, three years before Ames' memorandum book. My conversation was on Credit Foncier, another financial institution of which I was and am president; and William P. Furniss, Augustus Kountze, Oakes Ames, William H. Macy and Charles McAlister, directors, to develop lands along Pacific Railway. Wishing leading men of nation in enterprise, I offered Garfield thousand dollar share at par, which he declined because he had no means to buy it, and did not wish to have his name down unless he could pay when called upon. This shows that he evidently committed himself by mistaking Credit Foncier for Credit Mobilier.

Yes! It killed poor Brooks, who was scholar as well as gentleman! The old school Whig became young school Democrat, and was credit to the party. I am glad to off the stain of Credit Mobilier affair by saying that he came into it as capitalist, not as lobbyist or bribe, and that I could not have beat the dishonest Thad Stevens' strikers without him! The bill, as I said, was saved by forty-four unpaid Democrats under my lead to victory! I can give you names if you want them. They all dined with me at my twenty-plate banquet at Willard's! The two hardest men I had to fight were Holman (Dana's letter-pad candidate) and Washburn. Yes! this was time referred to when I beat Belmont, and made him postpone Chicago Convention 1864 from July 4 to August 29. Some day I will show how Rothschild put up McClellan to elect Lincoln! as Seymour was launched to elect Grant! Greeley to re-elect him! and Tilden to count in Hayes! as Hancock was put up to elect Garfield. All Democrats expect (like Harriman; when Rowell and Ennis coached him) to get share of syndicate game money.

#### Southern Railway & Steamship Association.

Pursuant to call recently issued the Executive Committee met at the office of the Association in Atlanta, Ga., at 3 p.m. on Dec. 6, and was called to order by the Chairman.

The following members were present: Henry Fink, A. L. Rives, M. H. Smith, R. A. Anderson, J. W. Thomas, W. G. Raoul, John B. Peck and B. D. Hasell.

Absent—John Scott, Hon. R. R. Bridgers and H. S. Haines.

The following gentlemen, connected with various roads, were also present: Thomas H. Carter, Sol Haas, J. H. Drake, G. S. Barnum, L. S. Brown, J. R. Ogden, J. J. Griffin, T. S. Davant, A. J. Orme, S. B. Pickens, J. S. Davant, J. W. Green, E. R. Drury, Thos. Welch and E. Peck.

The Chairman explained the cause of the call for this meeting. The reading of call was dispensed with.

The Chairman also read following telegram stating additional subject to be acted on:

"Mr. Fink telegraphs he proposes to call up for discussion at Executive Committee meeting, on 6th instant, the revision of rates from Eastern cities to Atlanta. Please take notice accordingly."

The afternoon (until 6 o'clock) was spent in discussion of the resolutions passed by board of directors Central Railroad of Georgia, without any result being reached, when—

Mr. Smith moved that the Committee adjourn until 7:30 p.m., and suggested that in the meantime Messrs. Fink and Raoul be requested to endeavor to reach an amicable adjustment by agreement.

Motion seconded by Mr. Peck and carried.

#### EVENING SESSION.

The Committee reassembled at 7:30 p.m. All present as per record of afternoon session.

Mr. Fink stated that he and Mr. Raoul had not been able to agree.

Mr. Peck urged that the Committee should decide as to the charge against the East Tennessee, Virginia & Georgia Railroad, and failing to agree, the matter, as to past transactions, should go to arbitration.

The following resolution offered by Mr. Fink, and seconded by Mr. Rives, was, after considerable discussion, adopted unanimously, it being understood that the General Commissioner should obtain assent of all members of the Association to the continuance of agreement:

"Resolved, That the question as to whether the cotton shipments, referred to in the resolutions of the board of directors of the Central Railroad of Georgia, shall be pooled (including all that may be carried, under same conditions, up to March 1, 1884), be referred to arbitration by Messrs. John Sciven, Thomas H. Carter and E. K. Sibley, and that the present contract and officers of the Association be continued until March 1, 1884."

[The reference in resolutions of board of directors of Central Railroad of Georgia reads as follows:

"It has come to the knowledge of the board that the East Tennessee, Virginia & Georgia Railroad has, since the first day of September, 1883, shipped from Atlanta and Macon a large number of bales of cotton which they have failed to report to the clearing-house of said Southern Railway & Steamship Association, and which they still refuse to report, so that said road may be properly assessed and be made liable for balances due to other members of the Association, in accordance with the existing contract, and the contract now submitted for 1884, and to which said road is a party."

Mr. Rives explained as to the Athens matter, that the contract of the Richmond & Danville Co. with the city of Athens was made while the company was not a member of the Association; the company held that the agreement had not been violated, the contract having thus been made while the company was not a member of the Association, and before the Athens business was pooled. This explanation was accepted.

The following, offered by Mr. Rives, and seconded by Mr. Fink, was adopted:

"Having reason to believe that rebates or drawbacks of \$0 or 90 cents per bale on compressed cotton via Atlantic ports from pooled points by some means are being paid, it is moved, in accordance with Art. 17 of the Agreement of the Southern Railway & Steamship Association, that the General Commissioner be instructed to examine the books of the railroads and steamships working to and via these ports, and investigate all the facts of the case, and report the result to each member of the Executive Committee."

The following, offered by Mr. Fink, was adopted:

"Whereas, it is alleged that the present south bound rates from Northern cities discriminate unjustly against certain communities; be it

"Resolved, That the Rate Committee be requested to investigate all the facts, and to report to the Executive Committee what changes, if any, should be made in the specific differences established at the New York meeting of the Rate Committee of Aug. 10, 1882."

The next question being Memphis rates, Mr. Fink stated that matters had been settled by an agreement between the parties interested.

The papers in reference to a Weighing Association, referred from the Rate Committee, were read by the Secretary; but no action was taken, the subject being passed for the present.

Mr. Peck called attention to the fact that the late fires at Charleston had developed, by means of claims paid, the fact that nearly all points cotton was shipped at an average of about 80 pounds per bale less than actual weights, and suggested strict enforcement of rule made by Rate Committee, of charging at rate of 500 pounds per bale in all cases where satisfactory evidence of correct weights is not given.

The issuing of rates without notice to the office of General Commissioner being referred to, it was understood as the sense of the Executive Committee that all lines should promptly notify the General Commissioner of all changes in rates or arbitraries.

The question of the Montgomery and Selma cotton pool was discussed between the gentlemen interested (Messrs. Fink, Raoul and Smith), and several propositions made, resulting in the understanding that the General Commissioner should correspond with Mr. John Scott, General Manager Alabama Great Southern Railroad, who is interested in the Selma business, asking him to join them in agreeing upon divisions; and failing to agree, to submit the matter to arbitration under the rules of the Association.

On motion of Mr. Raoul, the Committee adjourned, subject to the call of the Chairman.

In accordance with the action taken by the Executive Committee, General Commissioner Powers issues the following circular to members of the Association:

"In accordance with the above, notice is hereby given of reference of said question to arbitration, and 20 days is allowed parties interested to forward arguments to this office, after which 5 days is allowed in which to forward arguments to the opposite party, when 10 days more is allowed them in which to forward to this office their amended arguments, after which the arbitrators will meet and must make a decision within 20 days.

"If no objection is made by the arbitrators, they will meet at this office to act on the case, on Tuesday, Jan. 15, 1884.

"Please note also that by the foregoing resolution of the Executive Committee the present agreement of the Association is continued in force until March 1, 1884. This action needs to be assented to by each member of the Association. You will, therefore, please return one copy of this letter with your indorsement of assent or dissent."

## Transportation in Congress.

In the Senate on the 7th:

Mr. Groome, of Maryland, introduced a bill providing for the construction of the Maryland & Delaware free ship canal as a means of military and naval defense and for commercial purposes. The bill proposes a canal to connect the waters of the Chesapeake and Delaware bays, to be 100 ft. wide at bottom, 26 ft. below mean low water and 178 ft. at low water level, with locks 600 by 60 ft. in the chamber and sufficiently deep to allow the passage of vessels drawing 23 ft. of water. The Secretary of War is authorized to make the necessary surveys and to negotiate with the owners of property along the course of the canal, and if satisfactory terms cannot be reached, then to condemn the land. One million dollars is appropriated for the purposes of the bill.

In the Senate on the 10th:

Mr. Manderson, of Nebraska, presented a memorial from the Legislature of Nebraska asking Congress to make a settlement of titles held under United States patents by citizens of that state and now disputed by parties holding title under the St. Joseph & Denver City Railroad Co.

The standing committees of the Senate were announced. Those having relation to railroad and transportation interests are as follows:

Railroads.—Messrs. Sawyer, Hawley, Sewell, Sabin, Riddleberger, Cullom, Lamar, Williams, Jonas, Brown, Kenna.

Transportation Routes to the Seaboard.—Messrs. Aldrich, Cameron of Pennsylvania, Manderson, Palmer, Farley, Slater, Gibson.

Improvement of the Mississippi River.—Messrs. Van Wyck, Mitchell, Cullom, Pike, Jonas, Cockrell, Jackson.

Post-offices and Post roads.—Messrs. Hill, Sawyer, Mahone, Palmer, Wilson, Maxey, Saulsbury, Groome, Jackson.

Patents.—Messrs. Platt, Hoar, Mitchell, Lapham, Coke, Call, Camden.

In the House on the 10th:

Mr. Dunn, of Arkansas, offered a joint resolution declaring forfeited lands granted to the following railroad companies, and to states in aid of such companies: Gulf & Ship Island; Alabama & Florida; Coosa & Tennessee; Mobile & Girard; Coosa & Chattanooga; Alabama & Chattanooga; Pensacola & Georgia; North Louisiana & Texas; New Orleans, Baton Rouge & Vicksburg; St. Louis & Iron Mountain; Houghton & Ontonagon; North Wisconsin; Wisconsin Central; St. Paul & Pacific (St. Vincent Extension and Brainerd Branch); Hastings & Dakota; Oregon Central, and Texas Pacific (Federal land grant in the territories and California.)

The same member introduced a bill to compel the payment by the Kansas Pacific Railroad Co. of the cost of surveying, selecting and conveying certain lands granted to it, and to create a sinking fund for the Kansas Pacific, Sioux City & Pacific and the Central Branch of the Union Pacific. Also a resolution calling on the Secretary of the Interior for information in regard to the attempted assignment and transfer of the lands granted to the Texas Pacific, to the Southern Pacific Railroad Co. of New Mexico, the Southern Pacific of Arizona and the Los Angeles & San Diego of California.

Mr. Ves', of Missouri, has introduced in the Senate the following: Bill authorizing the construction of a bridge over the Mississippi River at St. Louis, Mo., which was read twice by its title and ordered to lie on the table, to be referred to the Committee on Commerce.

Also bill to authorize the construction of bridges across the Missouri River between its mouth and the mouth of the Dakota or James River, and across the Mississippi River between the port of St. Paul, in the state of Minnesota, and the port of Natchez, in the state of Mississippi, and across the Illinois River between its mouth and Peoria, in the state of Illinois, and to prescribe the character, location and dimensions of the same. Referred to the Committee on Commerce.

## The Bismarck Bridge of the Northern Pacific Railroad.

[CONTINUED FROM PAGE 803.]

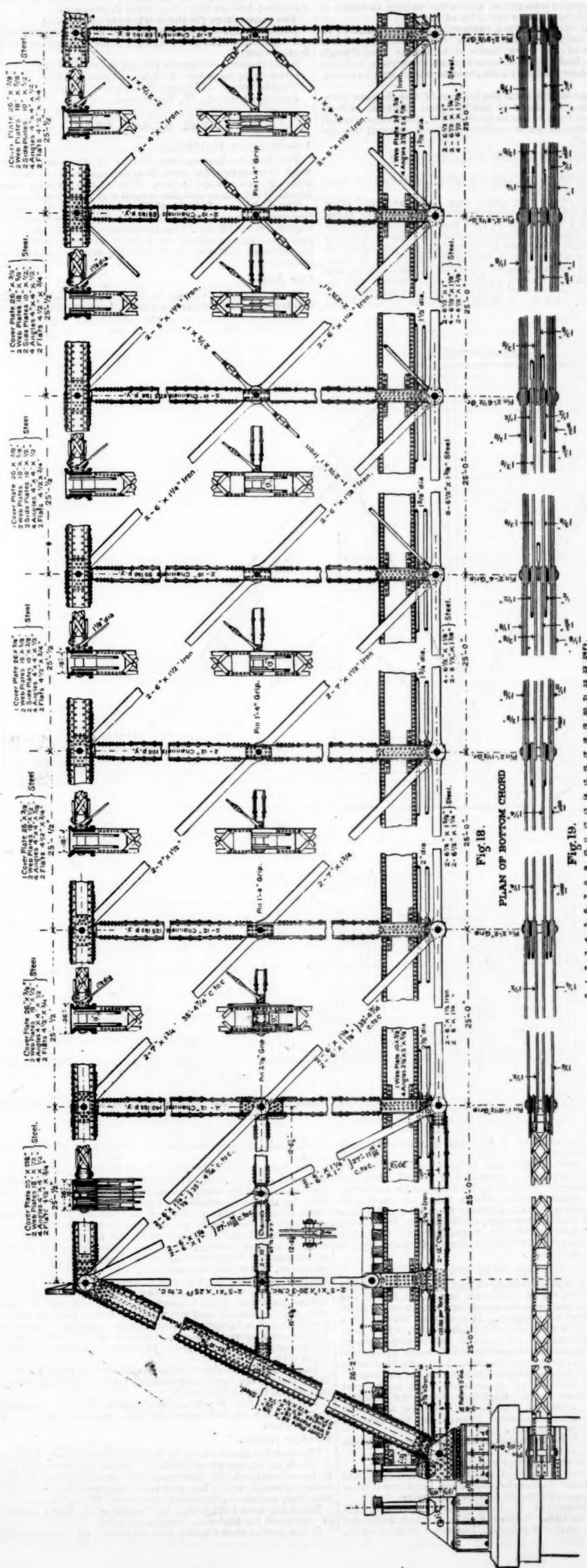
The approach spans are deck trusses of the fish-bellied or inverted bow-string pattern, as shown in fig. 5, published last week, this form being adopted to keep away from the slope of the embankment. They are entirely of wrought-iron, except the pins, which are of steel, and the wall plates, which are of cast-iron. Each span contains 88,954 pounds of wrought-iron, 2,825 pounds of steel, and 5,686 pounds of cast-iron, the total weight being 97,515 pounds.

Each of the three main channel spans measures 400 ft. from centre to centre of end pins divided into 16 panels of 25 ft. each. One of these spans is represented in detail by figs. 19 and 20. The trusses are of the double system Pratt or Whipple type, are 50 ft. deep from centre to centre of chords, and spaced 22 ft. apart between centres. The pedestals, the end posts, top chords, the ten centre panels of the bottom chord, and all the pins and expansion rollers are of steel. All other parts are of wrought iron, except the filling rings, wall plates, and ornamental work, which are of cast iron.

Each span contains 600,950 pounds of wrought iron, 348,797 pounds of steel, and 25,777 pounds of cast iron, the total weight of each span being 975,524 pounds.

The steel was manufactured in an open-hearth furnace and under the most rigid inspection. It is of such character that small sample bars were bent double and flattened back on themselves without any crack on the outside; one of the full-sized bars intended for the bridge, when tested to breaking, was stretched 4 ft. in 25 before fracture took place. The long spans are proportioned to carry two 75-ton locomotives followed by a train of 30-ft. cars, each loaded with 20 tons. With this assumed moving load the strains on the different parts of the structure are about 10 to 20 per cent. less per square inch than the limits which good practice has sanctioned in many other bridges.

The manufacture of the steel proved a source of serious delay, as the parties who originally undertook to furnish it wholly failed in doing so. Had the superstructure been promptly manufactured the bridge could have been opened at least two months earlier than it was. The floor is placed above the bottom chord, the floor beams being riveted to the vertical posts, thus increasing the vertical stiffness of the structure and reducing the apparent height to about 45 ft. The main and counter ties, which are more than 70 ft. long, are made in two lengths and coupled on a pin which passes through the centre of each vertical post, this arrangement at once sustaining the tie from deflection and holding the post against flexure at the centre. The end posts are stiffened by a strut connecting them at the centre with the stiff centre of the first vertical post. The vertical posts are connected transversely at the centre by struts which are attached to the central pins by small pins, which pass through the ends of the strut and through the main pins and serve also for the connection of a set of transverse diagonal rods reaching to the top lateral system; each pair of vertical posts is thus united into a stiff bent with a perfect system of bracing from the centre up, and a stiff base made by the floor



BISMARCK BRIDGE OVER THE MISSOURI—400 FT. SPAN.

beam connection. The end posts are made proportionately stiff by a wrought iron portal above the centre, the sides of which are extended down the sides of the

The floor is formed of oak timbers 9 in. square and 15 ft. long, spaced only 6 in. apart in the clear. On this are laid the steel rails of the track, inside of which are placed angle irons iron, bolted to every tie in a manner which is believed to make the floor perfectly safe from accidents due to derailment.

The extreme height from the bottom of the deepest foundation to the top chord of the bridge is 170 feet. Every precaution has been taken to provide for the special strains due to the violent gales which at times prevail in the Missouri valley.

#### ERCTION OF THE SUPERSTRUCTURE.

The east approach span was erected in April and the west approach span in May.

The erection of the long spans was postponed until after the summer flood. Each span was subdivided into three spans of about 120 ft. each by two timber piers, which supported Howe trusses of design similar to those commonly used on railroads. On these Howe trusses was placed a floor 30 ft. wide, on which ran a traveling derrick 65 ft. high, which spanned the permanent structure. This derrick was moved from panel to panel, as the work proceeded, and the great trusses were erected without any stationary staging above the floor. All the hoisting was done by steam, the

Local Inspectors—B. A. Sawyer, Inspector of stone at quarries; Robert Ross, Inspector of masonry.

The contractors for the work were as follows:

Sub-structure—Saulpaugh & Co., general contractors for sub-structure. Rust & Coolidge, sub-contractors for pneumatic work.

Superstructure—Detroit Bridge & Iron Works.

Grading approaches—Bellows, Fogarty & Co.

Timber trestle—Winston Brothers.

Rip-rap stone—C. W. Thompson.

#### THE SCRAP HEAP.

##### Locomotive Building.

The Rogers Locomotive Works in Paterson, N. J., last week discharged 200 men, in addition to those who were laid off two weeks before. The Cooke Works and the Grant Works have not discharged any additional men.

The Baltimore & Ohio Railroad shops at Mount Clare, Baltimore, have recently completed two new consolidation engines with 20 by 24 in. cylinders and 50 in. drivers, and two passenger engines with 19 by 24 in. cylinders and 60 in. drivers. Several more engines are in progress in the shops.

##### Car Notes.

The Buffalo Car Works in Buffalo, N. Y., are building 600 freight cars for the Delaware, Lackawanna & Western

Pa., have taken a contract to build a bridge over the Hudson River, near the upper part of the Highlands, for the proposed Highland Junction road.

##### Iron Notes.

The rail department of the Pittsburgh Bessemer Steel Works, at Homestead, near Pittsburgh, shut down Dec. 7.

It is said that the Edgar Thomson Steel Works, near Pittsburgh, will shut down shortly, unless the workmen will agree to some reduction in wages.

Furnace No. 1 of the Sheridan Iron Works, at Sheridan, Pa., has gone into blast, after being thoroughly overhauled and repaired.

Dilworth, Porter & Co., in Pittsburgh, recently filled a large order for spikes for the Chicago, Milwaukee & St. Paul road.

Lucy Furnace No. 1, in Pittsburgh, has gone out of blast for repairs. No. 2 Furnace will soon go into blast.

Colebrook Furnace at Lebanon, Pa., is now using a mixture of bituminous coal and coke as fuel in place of anthracite coal.

The rolling mill of the Mt. Hickory Iron Co. in Erie, Pa., which was recently rebuilt, was burned down on the morning of Dec. 9. The buildings were entirely destroyed and the machinery badly damaged. The loss is estimated as high as \$275,000.

No. 2 stack of the Pioneer Furnace at Marquette, Mich., has gone out of blast for repairs.

Arrangements are in progress to build a new blast furnace

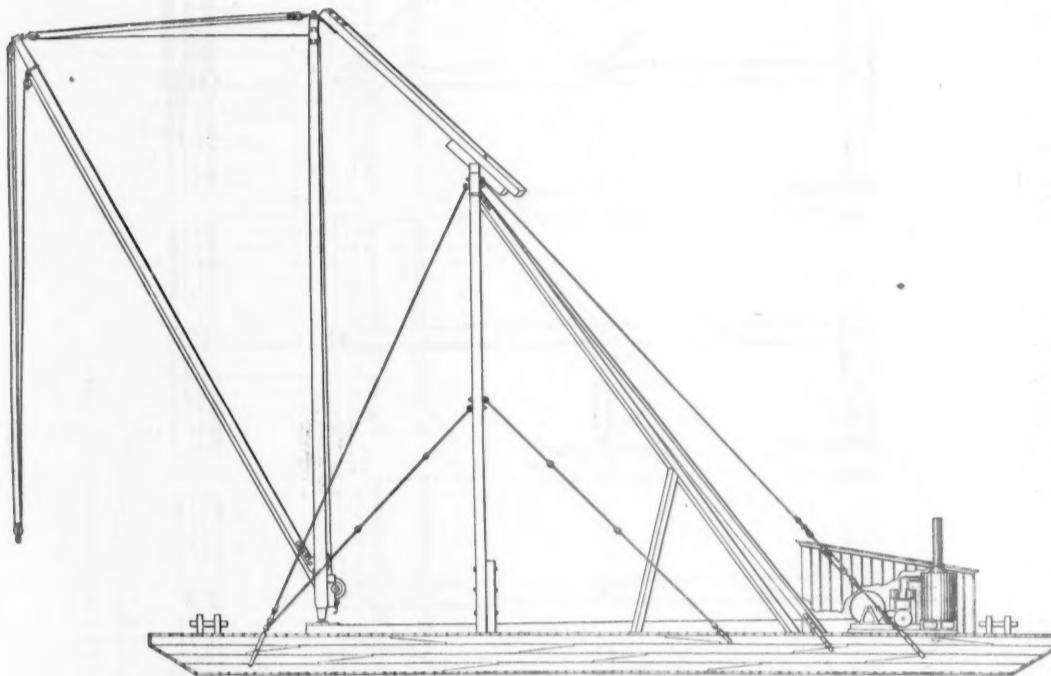


Fig. 21.

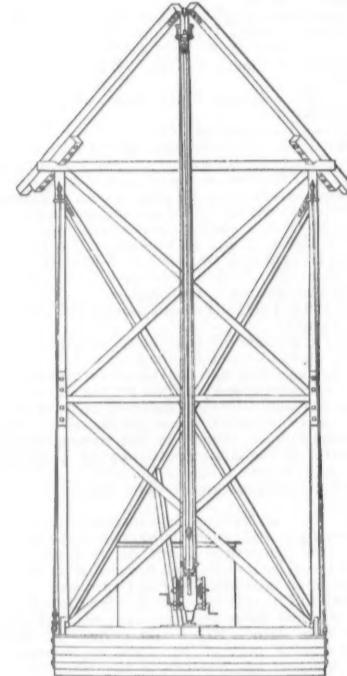


Fig. 23.

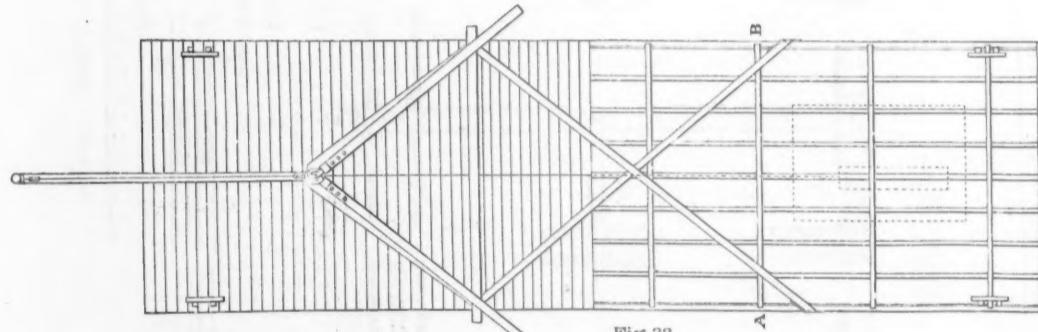


Fig. 22.

DERRICK BOAT USED IN CONSTRUCTION OF BISMARCK BRIDGE.

engines being mounted on a low flat car entirely independent of the traveler.

The first span erected was that between piers I. and II. The first iron was placed on Thursday, July 27, 1882, and the span was swung off so as carry its own weight on Saturday, Aug. 12. Exactly four weeks later, on Saturday, Sept. 9, the second span, that between piers II. and III. was swung, and four weeks after that, on Saturday, Oct. 7, the last span carried its own weight, requiring only the addition of the floor and the riveting of some of the details to make the bridge complete.

##### GENERAL REMARKS.

A large portion of the masonry of piers II. and III. was laid with a derrick boat, which is shown in figs. 21, 22, 23 and 24. This derrick boat was designed by Mr. Thomas Saulpaugh, one of the contractors. It consisted simply of a large scow on which was erected a timber bent, which was stayed in both directions. In front of this bent was placed an ordinary boom derrick of precisely the same class used on land, which was guyed to the bent by a pair of timbers reaching from the top of the mast to each end of the cap.

The Bismarck Bridge and approaches form an integral part of the Northern Pacific Railroad, being the absolute property of the Northern Pacific Railroad Co. and being built under the general charter granted by the National Government to that company.

The personnel of the Bismarck Bridge during construction was as follows:

George S. Morison, Engineer and Superintendent.

Resident Assistants—Henry W. Parkhurst, First Assistant Engineer; Benjamin L. Crosby, Assistant Engineer; Geo. A. Lederle, Assistant Engineer and Draughtsman.

Non-resident Assistants—C. C. Schneider, Assistant Engineer of superstructure; William F. Zimmerman, Inspector of steel and iron; James Sanderson, Inspector of shop work.

road, and 200 coal cars for the Rochester & Pittsburgh road.

The Cylinder Car Manufacturing & Transportation Co., with a capital stock of \$5,000,000 has been incorporated. The objects of the company are to build cylinder or other cars for the transportation of grain, passengers and such other articles as may be deemed advisable; to sell or lease such cars to individuals or railroad companies, or to contract with railroad corporations for the hauling of such cars with or without loads; to purchase grain or other articles of commerce for transportation, to construct and operate elevators, stores, warehouses, etc., and collect charges for hauling, cleaning, drying and storing grain, etc.; to purchase and sell or lease to railway corporations and individuals patented improvements in cars, engines or other railroad equipment, and generally to foster and encourage inventions of safe, speedy and cheap railroad operation. The incorporators of the company are W. C. Alberger, J. C. Casper and A. E. Steiger. The principal office is in New York city.

The Mount Clare shops of the Baltimore & Ohio Railroad in Baltimore are very busy and are turning out new freight cars at the rate of 20 a week.

The Ensign Car Works at Huntington, W. Va., recently completed a very handsome private car for Mr. C. P. Huntington.

##### Bridge Notes.

The new bridge works near Forty-seventh street, built by J. W. Walker, are about finished. Some machines are yet to be erected, which, however, will cause no delay in commencing work, which has just been begun on two new, and also first, orders. *Pittsburgh American Manufacturer.*

The King Iron Bridge Co., in Cleveland, O., has a number of contracts for highway bridges on hand.

It is reported that Clarke, Reeves & Co., of Phoenixville,

in Chattanooga, Tenn., and land has been bought for that purpose.

##### Manufacturing Notes.

The Westinghouse Air Brake Co., of Pittsburgh, has declared a semi-annual dividend of 20 per cent. on its stock.

The Colliar Furnace Co., in Detroit, Mich., has in course of construction two of its largest size cupolas, to go to Frankfort, N. Y., for the repair shops of the New York, West Shore & Buffalo road.

##### The Rail Market.

**Steel Rails.**—Quotations continue for Eastern mills at \$35 per ton at mill for large lots, and \$36 for small orders, although it is said that one large order has been placed at \$34.50. The Chicago mills quote \$37 per ton, which is about an equivalent price. It is said that the Pennsylvania Railroad Co. has placed orders for 75,000 tons for next year's delivery at \$35, with the condition that it is to have the benefit of any fall in the market which may occur. For Spring and Summer delivery the market is active, but very few orders are in hand for Winter delivery.

**Rail Fastenings.**—The market is quiet and weak at \$2.50 to \$2.60 per 100 lbs. for spikes in Pittsburgh. Track-bolts are quoted at \$2.90 to \$3 per 100 lbs. for square nuts, and \$3.10 to \$3.20 for hexagon nuts. Splice-bars are in light demand at 1.8 to 1.9 cents per lb.

**Old Rails.**—There is quite a demand for small lots of old iron rails, and prices are steady at \$23.50 per ton at tide-water for tees.

##### Smooth Track.

"Oh, the road is smooth enough," said the placid conductor to the complaining passenger. "There isn't a smoother road-bed in the United States. It's the cars that jolt. Company took the springs out last week, to oil them



SECTION ON AB.

Fig. 24.

SCALE.

0 5 10 15 20 25 30 FT.

and didn't get them back in time for this trip." And the complaining passenger grumbled no more, for he felt that he was in the presence of the Star Liver.—*Exchange*.

"C-c-conductor," said a passenger on a Western road, after an hour or so of bumping and jolting as the train made progress at the rate of 12 miles an hour, "How soon will we reach the end of the road where the rails are laid?"

#### Rough on the Cars.

The London *Engineer* says of some of the passenger cars on the Southeastern Railway that "they are square, low-celinged, cornered everywhere, cold, straight, draughty, noisy, wandering, vibrating, stuffy, dirty, dark, dingy, creaking, loose-windowed, worn-out, dangerous old coaches, and plenty of the Southwestern stock is nearly as bad." In addition to all this badness Colonel Rich, one of the Board of Trade inspectors "observed that the London & Southwestern Railway Co.'s gauge for the wheels of the rolling stock is slightly about  $\frac{1}{16}$  in. to  $\frac{1}{32}$  in. wider than the permanent-way gauge which was given to him to gauge the road."

#### The 24-Hour System.

Mr. B. W. Wrenn, General Passenger Agent of the Western & Atlantic, has issued a circular calling attention to the proposed reckoning of time from midnight to noon, counting from one to twelve o'clock, and afterward adding each hour, making our present 1 o'clock p. m. "13 o'clock," omitting "p. m." Under the proposed system the passenger trains leaving the city on the Western & Atlantic would present the following appearance:

7:30—For all points north, east and west, via Dalton or Chattanooga, also to Rome.

ces. Mr. C. S. Gadsden, the Superintendent of the Charleston & Savannah Railway, has overcome the trouble by printing the time of trains leaving Charleston and arriving at Charleston Junction in red ink upon the schedule, while all other figures are printed in blue ink. The contrast is striking and the expedient answers the purpose perfectly. The ingenuity of this method is worthy of special notice.—*Official Guide*.

#### Protecting Trains from Accident.

The Terre Haute & Indianapolis Railroad Co. has issued a new time-table accompanied by a revised set of rules for the government of employees, among which are the following:

"Torpedoes are fastened to the track by bending open the two tangs, placing the box on the rail with the label up, and banding the tangs around the head of the rail. The use of these signals is to be in addition to the regular day and night signals of the road, which also must be exhibited.

"When a train is detained on main track—from any cause whatever—it shall be the duty of the conductor to send a flagman, with three torpedoes, in the direction of the expected train, who shall go at least the distance of 80 rails and fasten a torpedo to the track, and then proceed and fasten the other two at intervals of 20 rails beyond the first.

"All trains, before crossing another railroad, must be brought to a full stop, and remain until the engineer has the most positive assurance that no other train is approaching the crossing. A train should not be allowed to stop on or across the track of another railroad or any public road crossing.

"Engineers are required to pass all switches carefully, and to use the utmost caution to prevent running over stock.

majority. The inventor asks for the President of the road and is shown to the office:

"Good morning. Is the President in?"

"No, sir; he won't be in until after dinner. Anything special?"

"Well, rather special. I have invented"—

"Ah! A patent car coupler! You must go to the General Superintendent."

"It's the biggest thing of the kind ever heard of."

"Yes, I know; but you'll find him four doors down the hall."

The inventor opens the fourth door and a clerk inquires:

"What is your business?"

"Well, I had a lame foot last summer and couldn't do much of any work, and so I set about it and"—

"Invented a car coupler, of course!" The General Superintendent is not in. The third door to the left for the assistant."

The third door opens to reveal an attendant ready to inquire what is wanted:

"Well, being I had to go down to buy myself some hickory shirting, I thought I might as well bring along"—

"Your patent car coupler. We were expecting you. Go down to the yardmaster."

"Everybody in our town says this is the biggest thing ever invented, and I reckon on"—

"Right this way to go down to the yardmaster's office."

The yardmaster isn't in. The train dispatcher won't listen. The gatekeeper has no time. The depot policeman may look at the invention some other day. When he entered the depot with that patent coupler under his arm, his mind was made up to let the Michigan Central or Lake Shore put it on their cars for \$50,000 cash down. Two hours have done the business for him, and, as he starts up town, the coupler is recklessly thrown under a seat in the waiting room and the inventor hopes from the top of his boots that somebody will steal it before he gets back.—*Detroit Free Press*.

#### He Bid too High.

On a southern railroad the other day a passenger complained to the conductor about the dusty state of the seats and windows, and directly followed it up with finding fault with the roughness of the track, and the apparently unsafe condition of the car. The conductor was very courteous, but entirely non-committal. This provoked the traveler to continue his complaints, and he presently said:

"I fail to see any water-cooler in this car?"

"No; we have none."

"And the front door won't shut."

"No."

"And the wheels rattle as if worn out."

"That's so."

"And sir!" exclaimed the provoked passenger, "I would not give you 25 cents on the dollar for the stock of your miserable line!"

"It's quoted at 15," said the conductor, as he rose up to go forward.—*Wall Street News*.

#### The Old-Time Conductor.

They may fit the modern railway car with the appointments and trappings of luxury and splendor; they may garb the officers of the train in showy uniforms, with gold lace trimmings and silver badges, but they cannot restore the conductor of the elder day. He is of the glories of the past. We shall not look upon his like again. He was of the time when railroads had a beginning and an ending, and represented communities, and he disappeared when cormorant corporations swallowed our past enterprises as mere worms to spin "through lines" and "systems," established sweeping rules of economy, and tore from the locomotives the honored names of our local great men and their other brass ornaments. Nowadays the conductor is only some promoted brakeman or switch-tender—a mere train-starter and ticket-taker. As now trains are stopped by the engineer with a pressure of his finger on the air-brake valve lever, so the duties of the car officers consist in helping people and bundles on and off, taking fares and calling the stations. These duties are shared in common by the conductor and his one or two assistants, and there no longer exists the once wide difference between the master of the train and the sooty menial who twisted the brake-wheel, tended the stoves, lamps and windows, and played the parts of general utility. We repeat it, the great commander-in-chief has vanished. Ah! then the title of conductor meant something. It was not a hollow name. The bearer was a man of honor and distinction. He swelled through the reeling aisles of the roaring train in princely pomp. When, like a soldier leading a charge, he dashed through the smoky, fiery blasts of the platforms, sprang into the car and slammed the door after him with a flourish, brakemen, checkmen, newsboys and peanut peddlers gave way in awe. He was attired in the finest silks, wools and cottons of the latest fashionable cut. Upon his snowy shirt-front gleamed a large gem of purest ray serene. In the fingers of his left hand, so arranged as not to hide the great seal ring, was crimped a parcel of bills. If he bore a lantern it was as clear as a star, and his name could be seen cut in the glass. His eagle eye darted from side to side as he seized upon the fares. Now he smiled upon a person of affluence and influence and passed a pleasant word; now he frowned upon a common man; now he pierced to the heart with a glance some timid passenger who had already paid. When he sat down to rest it was in the ladies' car—that rolling palace of barbaric exclusiveness; within which no male man dare sit his foot unless in servile attendance upon some member of the fair sex. The conductor's presence was felt from the engine-tender to the rear platform. The train started, stopped, backed, crawled, flew at the wave of his hand. Some admirers wondered how soon he would become sole proprietor of the road; other persons circulated stories that he owned large interests in all the city hotels, while others darkly hinted that it must take vast sums of the company's money to keep up such magnificence. But he has gone. *Sic transit gloria mundi*.—*Cincinnati Commercial*.

#### ANNUAL REPORTS.

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14:35—For all points north, east and west, via Dalton and Chattanooga, also to Rome.

16:05—For Rome and all way stations.

16:55—For Marietta and all way stations.

23:40—For all points north, east and west, via Dalton and Chattanooga.

The proposed manner of expressing time finds advocates everywhere, but there are many who object to such a change, on the ground that such a multiplicity of figures would be confusing. It is not likely that the change will be made for some time, if at all.—*Atlanta (Ga.) Constitution*.

The Associated Railroads of Virginia and the Carolinas, including the Atlantic Coast Line and the Richmond & Danville, also intend, it is said, to adopt the 24-hour system in their time-tables.

#### Prizes for Excellence of Track.

Mr. S. M. Felton, Jr., General Manager of the New York & New England Railroad, has made the following awards, based on the annual track inspection for 1883: To G. E. Daggett, best supervisor's division between Boston and Hudson River—No. 2 Eastern Division; to W. L. Derr, best supervisor's division on Norwich & Worcester, Providence, Woonsocket, and Springfield divisions and branches—Woonsocket Division and Rhode Island & Massachusetts Branch. First premiums have been awarded to Jerry Gleason, James Jordan, James Bracken and G. R. Scannett, foreman, for best sections on main line divisions; and second premiums to Edward Broderick, Peter Goucher, James Graney, John Sharkey and R. H. Bishop (the latter two dividing one premium), for best sections on other divisions and branches. A third premium was given to James Carlin of the Boston yard.

#### Running Under Two Times.

The new time-table of the Charleston & Savannah Railway, issued on Nov. 18, 1883, is probably in some respects the most remarkable time-table that has ever been issued. The trains of the road run over the track of the Northeastern Railroad from Charleston to Charleston Junction, a distance of seven miles. The standard of the Northeastern Railroad is *Eastern* time as indicated by the red line upon the official standard time map. The standard of the Charleston & Savannah Railway is *Central* time, which is indicated by a blue line. Railway officials will at once appreciate the difficulty of constructing a time-table under such circumstan-

ces. The frequent occurrence of this kind will be considered evidence of incompetency. They will follow the directions of the conductor as to stopping, starting, number of cars to haul, etc., unless they are in conflict with these rules or involve hazard, in which case they will be considered equally responsible. Run slow over bridges and through towns.

Whenever one train is to follow another notice must be given to the forward train and the conductor of the forward train must notify all conductors whom he may meet at stations of the fact, besides carrying the proper signals, and when passing trains where he does not stop the engineer must call attention to the signals of a following train by five successive sounds of the whistle. The engine of the opposing train or trains will answer the signal by two short blasts of the whistle. Conductors and engineers of such trains sounding such flag signals, and failing to get a response from the train or trains for which they are sounded, must immediately stop their trains and ascertain if such whistle signals have been heard, and why no response thereof, which facts must be reported to the master of transportation from the first telegraph office. One train following another must be kept at least five minutes behind, except at meeting points, which must be approached with great care. When an engine is sent over the road on the time of a passenger train, it must precede the passenger train, assume its time and rights and exhibit the signals for following train. A passenger train being preceded by an extra engine, on its time, will lose none of its rights, but must run three minutes behind time.

A careful, reliable brakeman must at all times be stationed on the rear car of every train, while the train is in motion, that in case of delay or accident he may be used to flag following engines, or as emergencies require. Conductors must enforce this rule, whether they know engines are following their trains or not."

#### The Car Coupler Man.

There will never come a time when the headquarters office of a railroad line will not receive at least one visit per week from the man with the patent car coupler. During the last 15 years he has called about four times a week, and that average is being maintained in a way to wear out half carpets as fast as manufacturers can desire. The ear couplers are not all alike, but the inventors are. The programme is as regular as if it had been adopted by a large

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Huntingdon & Broad Top.....	121	Toledo, Ann Arbor & Gd. Trk. ....	510
Illinois Central.....	167, 180, 182	Union Pacific.....	164
Indiana, Bloom. & Western.....	463	Utah Central.....	246
Indianapolis & Vincennes.....	495	Valley of Ohio.....	280
International & Great N. ....	231	Vermont & Sawyer.....	457
Jessup, Md. & Ind. ....	366	Wabash, St. Louis & Pac. ....	167, 180
Kansas City, Mo. Scott & G. ....	707	Virginia Midland.....	100
Kentucky Central.....	246	Washab, St. Louis & Pac. ....	167, 180
Lake Erie & Western.....	750	Warren.....	407
Lake Shore & Mich. So. ....	278, 295	Western R. Association.....	37
Lawrence.....	495	Western Union Telegraph.....	673
Lehigh Coal & Navigation Co. ....	138	West Jersey.....	568
Louisville & Nashville.....	278	West & Central & Pittsburgh.....	12
Little Rock & Ft. Smith.....	278	Wilkes-Barre & Northern.....	568
Long Island.....	73	Wisconsin Central.....	568
Louisville & Nashville.....	510, 651, 671	Woodstock.....	100
Maine Central.....	21	Worcester & Nashua.....	40
Manchester & Lawrence.....	395	York & Peachbottom.....	355
Manhattan.....	181, 755		

## Connecticut Minor Railroads.

We give below the earnings of several Connecticut railroads as reported to the Railroad Commission for the year ending Sept. 30, the list including only those whose reports are not presented in any other form :

	Per mile—	Per ct.
Earnings, Net earn. Gross. Net. of exps.	\$215,455 \$15,370	4.8
1882-83. ....	195,874	700
N. Haven & Derby.....	165,850	75,767
1881-82. ....	168,493	77,473
N London Northern.....	637,712	148,644
1881-82. ....	578,384	68,072
Sheaung.....	64,330	*10,562
1881-82. ....	63,932	8,538
South Manchester....	1,593	1,557
1881-82. ....	11,229	1,962
Stamford & N. Canaan.....	13,115	2,548
1881-82. ....	15,109	5,840
Net deficit.....		

The Stamford & New Canaan road has recently been sold to the New York, New Haven & Hartford Company.

## Richmond &amp; Petersburg.

This company owns a line from Richmond, Va., to Petersburg, 22.5 miles, with a branch to Port Walthall, 2.5 miles, making 25 miles in all. The report presented at the annual meeting last week is for the year ending Sept. 30.

The earnings for the year were as follows:

1882-83.	1881-82.	Inc. or Dec.	P. c.
Earnings.....	\$182,821	\$174,378	I. 4.9
Expenses.....	104,576	117,781	D. 13,205 11.2
Net earnings.....	\$78,245	\$56,507	I. \$21,648 38.2
Gross earn. per mile.....	7,313	6,975	I. 338 4.9
Net " "	3,130	2,264	I. 866 38.2
Per cent. of expenses.....	57.20	67.60	D. 10.40

During the year 200 tons of steel rails, 10,120 new ties and 12 new safety switches were used in repairs. A siding 3,200 ft. long was built to a quarry near Falling Creek. The track of the road was ditched and partly new ballasted. A new locomotive was ordered, one box, 8 flat and 13 gravel cars built in the shops.

The long bridge over the James River, destroyed by fire nearly two years ago, has been replaced by a permanent structure. The old wooden bridge had 19 spans; of these one at the Manchester end and two at the Richmond end are filled in, and the third span at the Richmond end is to be replaced by an arch. The remaining 15 spans, varying from 140 to 153 ft. in length, are of iron, built by Clarke, Reeves & Co. Most of the old piers were used, but new abutments and retaining walls were built at each end. The President's report says:

"The cost will not exceed the original estimates of \$166,000 for the completed work, but the filling on the south end and the span on the north end will not be completed until next year. The expenditure for the bridge up to the end of the fiscal year was \$98,623, which has been charged to a separate account. The bonded debt of the company has been increased \$36,000. The balance was paid out of accumulated revenues, as no dividend on the stock was paid for a year after the loss of the old bridge by fire. The payment of dividends was resumed on July last at the rate of 5 per cent. per annum. The directors have declared a semi-annual dividend of 2½ per cent. to be paid on Jan. 1, and it is believed that this rate will enable the company to pay the balance of the cost of the bridge from surplus earnings, with perhaps a small increase in the bonded debt. Twenty-four thousand dollars of the old 8 per cent. bonds, due April 1, last, have been paid and cancelled, and provisions made for the payment of the balance as they mature during the next three years. The suits against the company for damages to property, caused by the fire of March, 1882, resulted in a verdict for the company in the first test case, and the others were withdrawn upon payment by the company of accrued costs. It is satisfactory to know that in the close legal investigation made, in this case no fault or negligence was proved against any of the officers of the company."

## Georgia Pacific.

At the close of its last fiscal year this company owned lines from Atlanta, Ga., to Eden, Ala., including the Belt line around Atlanta, 137 miles, from Birmingham, Ala., to Coalburg, 10 miles; and from Columbus, Miss., to Alta, Ala., 65 miles. It also owned a narrow-gauge line from Greenville, Miss., to Jacksonville, 29½ miles, with a branch from Stoneville to Sharkey, 23½ miles, making a total of 212 miles of 5 ft. gauge and 52 miles of 3 ft. gauge.

Since the close of the year the road has been opened from Atlanta to Birmingham, 168 miles.

During the year the narrow-gauge road remained unchanged; the wide-gauge mileage increased from 51 to 212 miles, the average worked for the year being 120½ miles.

The statements given below were presented by the President at the annual meeting recently. The increase in mileage was so great that no comparisons can be made with the previous year.

The earnings for the year were as follows:

Wide gauge.	Narrow-gauge.	Total.
Earnings.....	\$171,655	\$82,032
Expenses.....	117,564	54,080
		171,644
Net earnings.....	\$54,091	\$27,952
Gross earn. per mile.....	1,427	1,578
Net " "	450	538
Per cent. of exps.....	68.49	65.92
		67.68

The earnings were very fair for an unfinished road in new country. The line could hardly be expected to develop much traffic until completed from Atlanta to the Alabama coal fields.

The income statement is as follows:

Net earnings as above.....		\$82,042.57
Interest on first-mortgage bonds.....	\$59,586.00	
Items charged to profit and loss.....	1,706.30	

Balance, surplus for the year.....

..... \$20,750.27

The road is to be extended to Greenville, Miss., the sections from Birmingham to Coalburg, from Alta, to Columbus and from Jacksonville to Greenville being parts of the extension. The narrow-gauge line will be changed to 5 ft. when the track from the east reaches a connection with it.

## Northeastern (South Carolina).

This company owns a line from Charleston, S. C., north to Florence, 102 miles. Its report is for the year ending Sept. 30.

The company holds one half interest in the lease of the Central Railroad, of South Carolina, 40 miles long, from Sumter, S. C., to Lane, but its operations are not included in the report.

The earnings for the year were as follows:

1882-83.	1881-82.	Increase. P. c.
Freight.....	\$415,878	\$386,141
Passage.....	164,086	146,052
Mails, etc. ....	38,833	28,035
Total.....	\$618,747	\$560,228
Expenses.....	433,923	378,110

The report says: "Our increased receipt from freight is to be explained by our having moved this year an excess of 10,891 bales of cotton and 29,800 barrels of naval stores over the quantities of each moved the preceding year, and also by a larger movement in miscellaneous freights, growing out of the uninterrupted prosperity of the country during the period referred to. The increase in our passenger receipts has been due, almost exclusively, to the greater number of through passengers conveyed this year, the excess having been 9,372; while no material increase in the number of local passengers can be shown."

Of the company's financial condition the report says: "In conformity with the resolution passed at your last annual meeting, we, forthwith, prepared 1,838 bonds of \$1,000 each, dated Jan. 1, 1883, payable Jan. 1, 1933, bearing interest at the rate of 6 per cent. per annum, and secured by a mortgage of the entire property of the company to the Metropolitan Trust Co. of New York, in trust. As provided for in the said deed of trust, 1,142 of these bonds have remained in the hands of the trustee (unexecuted), to be applied to the settlement, at their maturity in September, 1893, of the present outstanding first and second mortgage bonds of the company, aggregating \$1,142,000—the remaining 694 bonds (or \$694,000) being subject to the disposal of the company, for the general purposes therein described. These bonds (with the exception of 17) were subsequently sold, or rather subscribed for, by the stockholders, who alone had the privilege of purchasing them ratably with their holdings of the stock."

"Our lease of the Central Railroad of South Carolina, jointly with the Wilmington, Columbia & Augusta R. R. Co.—for 99 years, has resulted satisfactorily, the net earnings to each of the lessees having so far been \$2,251. This would have been larger, but in view of the extended period of the lease, it was deemed advisable to appropriate a considerable portion of the earnings of the road to the permanent improvement of its road-bed. This is now in very good order."

"A review of our past fiscal year is not without its encouraging features. Among them is the payment in April last of a dividend of 3 per cent. upon the capital stock of the company, the first (if we accept a small and nominal one in Confederate currency), which has ever been declared since the completion of the road in the year 1857. A further dividend of 3 per cent. has been earned and might have been declared at a later period, but, from various considerations, your board has deferred its action in reference to it."

## Naugatuck.

This company owns a line from Stratford Junction, Conn., to Winsted, 57 miles, and it has also the right to use the New York, New Haven & Hartford road from Stratford Junction to Bridgeport, 4 miles, making 61 miles in all. The company also works the Watertown & Waterbury road, 4½ miles, under agreement. The report is for the year ending Sept. 30.

The general account is as follows, condensed:

Stock.....		\$2,000,000.00

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conferring and agreeing with the directors of the Nashua & Rochester Co. that such union would be for the best interests of both corporations, procured the necessary legislation for the purpose, both in Massachusetts and New Hampshire, and the union has now been effected."

## Boston &amp; Lowell.

This company owns a main line from Boston to Lowell, 26.75 miles; branches from Lowell to Salem, 16.80 miles; from Lowell to Lawrence, 12.42 miles; from Arlington to Concord, Mass., 20.33 miles, and four short branches, 9.96 miles in all, making 86.26 miles owned. It leases the Nashua & Lowell, 14.50 miles; the Stony Brook, 13.24 miles; the Wilton, from Nashua, N. H., to Wilton, 15.50 miles, and the Peterboro road, from Wilton to Greenfield, 10.50 miles, making 53.74 miles leased and 140 miles worked. The report is for the year ending Sept. 30.

The company also owns one-half share in the Manchester & Keene road, from Greenfield, N. H., to Keene, 29.55 miles; and works that road for joint account of itself and the Concord Railroad Co.

The equipment consists of 77 locomotives; 96 passenger and 41 baggage, mail and express cars; 1,437 freight cars and ten other cars.

The general account, condensed, is as follows:

Stock.....	\$3,792,000.00
Funded debt.....	3,546,400.00
Floating debt, bills payable.....	765,000.00
Nashua & Lowell R. R.....	228,226.06
Coupons, dividends and balances.....	206,667.29
January dividend.....	113,760.00
Profit and loss.....	60,544.94
Total.....	\$9,112,598.29
Road and equipment.....	\$8,010,450.04
Leased property.....	228,226.06
Manchester & Keene R. R.....	92,773.13
Peterboro R. R. stock.....	19,860.00
Sinking funds.....	43,402.62
Materials on hand.....	221,121.86
Accounts and balances.....	315,805.87
Cash.....	180,958.71
Total.....	9,112,598.29

Stock remains unchanged. The funded debt was increased by the issue of \$250,000 new 4½ per cent. bonds for the purchase of the Middlesex Central road. The notes payable were increased \$300,000.

The traffic for the year, as reported to the Railroad Commission, was as follows:

Train miles:	1882-83.	1881-82.	Inc. or Dec.	P. c.
Passenger.....	961,850	927,751	I.	34,099
Freight.....	324,114	361,827	I.	22,289
Services and switching.....	486,506	451,302	I.	35,264
Total.....	1,772,530	1,680,880	I.	91,650
Passenger-miles.....	3,822,833	2,789,785	I.	1,033,048
Tons freight carried.....	47,617,233	40,209,559	I.	7,407,674
Ton-miles.....	37,749,206	46,279,201	D.	8,529,095
Avg. train load:				
Passengers No. ....	50	43	I.	7
Freight, tons....	116	153	D.	37
Avg. rate:				
Per passenger-mile.....	1.94 cts.	1.67 cts.	I.	0.27 ct.
Per ton-mile.....	2.98 "	2.60 "	I.	0.38 "

Through business furnished 20 per cent. of the passenger-miles and 60 per cent. of the ton-miles last year.

The earnings for the year were as follows:

1882-83.	1881-82.	Inc. or Dec.	P. c.
Freight.....	\$1,094,746	\$1,170,010	D.
Passengers.....	922,650	824,834	I.
Mail and express.....	62,844	56,204	I.
Miscellaneous.....	48,521	34,574	I.
Total.....	\$2,128,761	\$2,085,622	I.
Expenses.....	1,393,459	1,410,277	D.
Net earnings.....	\$735,302	\$675,345	I.
Gross earn. per mile.....	15.205	14.897	I.
Net ".....	5.252	4.824	I.
Percent. of exps. ....	61.76	67.62	D.
			6.86

Taxes are included in expenses, amounting to \$80,898 last year and \$85,761 for the preceding year.

The business upon the Lexington & Arlington Branch has grown to such proportions as to require extensive additional facilities in order to economically handle the same. Considerable work has been done in the way of double-tracking the road as far as Arlington, and new station accommodations have been supplied at that point, and the cost of the same included in operating expenses.

Several new iron bridges have been completed, and at North Winchester and North Billerica the grade of the road has been changed at large expense to give greater safety to teams passing under the bridges at those points, and charged to operating expenses.

The track and bridges have been kept in excellent condition; 1,072 tons of new steel rails and 71,885 ties have been laid in the track. Included in repairs of road-bed and track is an expense of \$20,415 for new side tracks; 19 miles of new wire fence has been built during the past year, and charged to operating expenses.

The income account for the year was as follows:

Net earnings, as above.....	\$735,301.04
Rentals paid.....	\$128,613.47
Interest ".....	239,834.90
New equipment bought .....	118,675.00

Surplus for the year..... \$248,178.57

From this surplus one dividend of 2½ per cent. was paid July 1, and one of 3 per cent. has been declared, payable Jan. 1, making 5½ per cent. for the year.

Early in May last the Massachusetts Central Railroad was surrendered by its stockholders into the hands of the trustees of its first mortgage bonds. Negotiations have lately been progressing, looking to the resumption of operations on this road.

The erection of new freight-houses in Boston will be commenced at an early day. In East Cambridge a sea-wall is being built on Miller's River, which will give room for additional hay and lumber sheds—facilities much needed, and which will attract a much larger portion of this business to the road than heretofore. The increase in the coal business at Mystic Wharf has been so large as to render additional accommodation imperative. Contracts have been let to do all the necessary dredging, and for building the remaining portion of the sea-wall and timber-pier, thus completing, substantially, the work at this point contemplated at the time the property was purchased. Upon the completion of this work this road will have the best facilities for the handling of coal in Boston harbor.

Large additions have been made to the tracks in Lowell the past year, and other improvements have been made. Increased yard-room will be necessary to the convenient and economical handling of business in the future.

In Lawrence a large purchase of land for a freight-yard is now giving much greater facilities for handling freight at this point than heretofore.

The report says: "During the joint management of this road with the Concord Railroad, an undivided half-interest was purchased in the Manchester and Keene Railroad, ex-

tending from Greenfield, N. H., to Keene. The road was in such a condition as to render an efficient operation of it impracticable, and large and expensive improvements were immediately commenced at the joint expense. The business of the road is showing a very gratifying increase, and when the projected improvements are completed, and proper terminal facilities in Keene secured, the wisdom of the investment will be apparent.

"Our proportion of the cost of completed improvements on this road for the year ending Oct. 1, 1883, amounted to \$84,695, although properly a charge to construction account, has been charged to income, as our earnings for the year, over and above dividends declared, have been more than sufficient to warrant such a disposition.

"This corporation has availed itself of the act of the Legislature, authorizing it to purchase the property and franchise of the Middlesex Central Railroad (Lexington, Mass., to Concord, 11.08 miles), and has issued its 4½ per cent. bonds for \$250,000 in payment therefor, agreeably to the vote of the stockholders at their last meeting.

"A question having been raised as to the validity of our lease of that portion of the Nashua & Lowell Railroad within the state of New Hampshire, your directors have re-executed said lease in accordance with the New Hampshire law. This removes any possible question as to our title to this property.

"The contract providing for the joint operation of this road with the Concord Railroad was terminated, by mutual consent, on March 1, 1883. During its continuance the conflicting interests of the roads represented in the board of the Concord Railroad, deprived us of the result hoped for, a large reduction in expenses.

"Since the termination of the joint contract, the earnings have increased, while the expenses have been materially reduced, notwithstanding the fact that unusually large expenditures have been made for permanently improving the property of the road, which have been included in expenses of operation. The rapid development of our local traffic, and such other business as is necessarily tributary to our road, has fully occupied our terminals, and relieved us from the necessity of making such concessions to obtain or retain such contributive business as has been in the past of very questionable value.

"Fair and liberal concessions will be made to all of our business connections for such traffic as they desire to send over our line, but no traffic will be encouraged that places an assessment upon our local interests to meet the deficiencies occasioned by being a very small part of a very long line. There is every reason to believe that the business of the road will continue to increase, and that a continued careful supervision of the expenses will result in a further increase of net earnings."

## Boston &amp; Albany.

At the close of its last fiscal year, Sept. 30, 1883, this company owned and worked the following lines:

Main line, Boston to Albany.....	201.65
Grand Junction Branch, Cottage Farm to East Boston.....	9.30
Brookline Branch, Boston to Cook street, Newton.....	6.65
Newton Lower Falls Branch.....	1.10
Saxonyville Branch.....	3.70
Milford Branch.....	12.00
Millbury Branch.....	3.00
Athol Branch, Springfield, Mass., to Athol.....	47.70
Hudson Branch, Chatham, N. Y., to Hudson.....	17.33
Total owned.....	302.63
Pittsfield & North Adams road, leased.....	18.65
Ware River road, leased, Palmer to Winchendon.....	49.30
North Brookfield road, leased.....	4.16
Spencer road, leased.....	2.17
Total work.....	376.91

The road owned was increased by the purchase from the New York & New England Co. of the section of its Woonsocket Division from Brookline to Cook street in Newton, 5.3 miles, which was transferred to this company Feb. 17, 1883.

The equipment consists of 56 passenger, 158 freight and 30 switching engines, 244 in all; 219 passenger and 49 baggage and postal cars; 5,398 freight cars; 639 other cars and 12 snow-plows.

Of the 244 locomotives 198 have been built in the company's own shops.

The general balance sheet is as follows:

Liabilities:	
Capital stock.....	\$20,000,000.00
Seven per cent. bonds.....	5,000,000.00
Six ".....	2,000,000.00
Five ".....	3,858,000.00
Unclaimed dividends and interest.....	352,522.99
Pittsfield & North Adams dividend, due Jan. 1, 1884.....	11,250.00
Ware River dividend, due Jan. 1, 1884.....	26,250.00
Notes payable.....	160,900.00
Ledger balances due agents and corporations.....	363,307.58
Improvement fund.....	761,804.29
Ware River sinking fund.....	49,329.71
Profit and loss.....	2,788,795.17
Total liabilities.....	\$35,412,158.75

## Assets:

Cost of road and equipment.....	\$27,514,116.50
Hudson River bridges.....	475,485.83
Materials.....	437,105.85
Real estate and land.....	119,678.98
Ledger balances due from individuals and corporations.....	365,163.82
West Stockbridge R. R. stock.....	13,000.00
Cash.....	658,316.34
Notes receivable.....	310,000.00
Trustees improvement fund.....	811,134.00
Springfield & Northeastern R. R.....	438,358.28
Newton Highlands Branch.....	411,400.00
Boston & Albany stock.....	3,858,400.00
Total assets.....	\$35,412,158.75

been charged to premium account and \$11,601 to the trustee. The fund now stands at \$811,184, estimating all the stocks and bonds at their par value."

The traffic for the year was as follows:

Train miles:	1882-83.	1881-82.	Inc. or Dec.	P. c.
Passenger.....	1,825,08	1,805,924	I.	19,157
Freight.....	3,634,116	3,608,313	I.	25,803
Service.....	192,105	156,272	I.	35,827
Total.....	5,651,302	5,570,515	I.	80,787
Passengers carried.....	8,079,072	7,524,138	I.	554,934
Passenger-miles.....	157,255,971	151,255,032	I.	6,000,930
Tons freight moved.....	3,411,324	3,415,329	D.	4,005
Ton-miles.....	373,535,450	374,317,338	D.	781,882

The traffic for the year was as follows:

Between	Boston and Albany.	All other.	Total.
East-bound.....	778,772	1,620,085	2,398,857
West-bound.....	187,282	825,185	1,012,467

Total..... 996,054 2,445,270 3,441,324

Per cent. of east-bound..... 80.6 66.3 70.3</



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#### EDITORIAL ANNOUNCEMENTS.

**Passes.**—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

**Addressess.**—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

**Contributions.**—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS OF railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

**Advertisements.**—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN OPINIONS, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

#### TESTING AND INSPECTING MATERIALS.

That a buyer, in order to avoid being cheated, must assure himself that the goods delivered are of the kind and quality agreed upon is a lesson which every person learns early in life, and is the general practice in all mercantile transactions. That a precaution, the necessity for which is so generally recognized, should be so commonly neglected by railroad companies, which are among the largest buyers and consumers of material in the community, is a little surprising. Nevertheless there are probably very few railroad companies which have any adequate system for testing or inspecting material received, or, in fact, any organized method whatsoever for that purpose. This is no doubt due, in a very great measure, to the fact that, with the exception, perhaps, of the principal officers, no one engaged in the operating departments has any direct interest in securing good material, nor is it made the duty of any one to see that its quality is up to the required standard. In fact, one of the chief difficulties consists in establishing standards of quality for the many different kinds of materials used. It is not easy, for example, to say just what are the ascertainable qualities which lubricating oil or varnish should have. It would puzzle the combined intelligence of the engineers, master mechanics and master car-builders of the country to prepare specifications for each one of the many articles which are used in their departments. Take one of the articles already mentioned: who is there that is prepared to draw up exact specifications of the qualities which lubricating oil should have, which are ascertainable by testing and inspection? The same thing is true of many other articles, such as tool and spring steel, copper, brass, steel rails and tires, cast-iron wheels, paints, soap, textile fabrics, etc. An intelligent expert in the manufacture of each one of these would probably have little difficulty in making specifications of ascertainable qualities, which if required in the material bought would be, to a very great extent if not entirely, effectual in guarding a railroad company against fraud in their purchase.

We speak of *ascertainable* qualities because it is of little service to specify qualities which are not ascertainable. To say that an oil must be a good lubricator is not sufficient, because the question at once arises; How can we know, on inspecting the oil, whether it is a good lubricator. To say that steel tires should run so many thousand miles under given conditions without requiring to be turned is not enough. A master car-builder or master mechanic should know, when a car-load of such tires is received, whether they

have the qualities which will make them wear well. Now, it is of course true that in many cases there are no available means of determining whether materials received have the qualities required. In other words, in many directions our knowledge has not advanced far enough to enable us to determine by test and inspection the actual value to railroad companies of many of the materials they are using. While this is true, and while our ignorance is to be deplored, nevertheless, it is also true that it is entirely practicable to make specifications of *ascertainable* qualities of many materials which will indicate very certainly their value to their users. Some railroad companies are now doing this and find it very much to their advantage. The qualities specified are such as are ascertainable by comparatively simple means if the material is carefully inspected and tested. If we take an article like bar iron, which enters so largely into the construction of all rolling stock, it will readily be seen that it is of very great importance that it should be known whether it is of good quality. Nothing need be said about the difference between good iron and that of an inferior quality, excepting that it makes the difference between the failure of rolling stock, and other structures, in numberless cases, and the failure to fail. The ascertainable qualities which good iron must have can be easily specified, and the tests are simple and can be quickly made. Only care and accuracy are needed. Mechanical tests alone are required, although chemistry may at times throw much light on the subject. All that is needed is that the test should be carefully, accurately and honestly made.

Notwithstanding these facts there is probably only a very small minority of the railroads in this country which have anything deserving the name of a system for testing and inspecting the bar iron which they use. Ordinarily no means whatever are employed, excepting mere casual observation, to determine the value of different kinds of coal used, although its cost amounts to about 10 per cent. of the total operating expenses. A very simple way of getting at this is to keep a careful account of the consumption of different kinds by engines doing equal amounts of work.

It is of course true that in making tests the aid of chemistry and other science must often be called in, and it is also true that there is nothing which some excellent people seem so much afraid of as "science." They regard it as a species of sorcery or jugglery, and have the feeling that when its help is sought, somehow there will not be fair play. Now it may be assumed as generally true, that no one regards scientific knowledge of which he himself is possessed as useless, or, within its own limitations, untrustworthy. Men are suspicious of such knowledge only as they are ignorant of. It is true that there is a great deal of humbug which assumes the name of science, but true science is, after all, only a superior quality of common sense.

If the tests of materials are to have any value, they must be carefully made. Care and accuracy in making them insure definiteness of knowledge concerning the qualities of the materials tested; and definiteness, Herbert Spencer says, is the characteristic which distinguishes scientific knowledge from "that indefinite knowledge possessed by the uncultured." Almost any railroad officer, if he had accounts to keep involving the expenditure of money, would insist on having them kept with absolute accuracy, because experience has taught that unless they are so kept errors of a very serious character are certain to occur. Now, in keeping accounts the limited training which the accountant has in mathematics is what gives him the capacity for exactness, precision or definiteness. Tests as simple as those required to determine the quality of bar iron must be made in a somewhat delicate machine, and the observation and records must be accurately made, otherwise they will be misleading and valueless. The same thing is true of the tests of other articles. When the aid of chemistry is called in the analyses are worthless unless they are made with precision, which often requires the most delicate and painstaking manipulation and observation. In fact it is difficult to see how any system of testing and inspecting materials would serve its purpose, without having it assume a more or less scientific character.

It will generally be found, though, that if any system of testing or inspecting materials is proposed for a railroad company, it will meet with a great deal of opposition from various sources. Of course all who are profiting by the sale of articles of poor quality at good prices will resist to the utmost any thorough system of testing. Then, too, it is apt to interfere seriously with the equanimity of the purchasing department. Materials are apt to be rejected, and what perhaps may be regarded as the best bargains by

those who made them turn out to be just the reverse. Honest and intelligent inspection interferes, too, seriously with all douceurs, if there are any, which hide under the shadow of purchasers. Douceurs, to coin a word, are quite certain to object to any system of tests or inspection likely to reveal defects or deficiencies in the articles the sale of which is a source of revenue to them. Douceurists, to make another word, are apt to be equally pronounced in their opposition to a system which is quite sure to interfere with their little gains.

Considering, then, that those who buy material and those who use it may have reason to object to thorough tests and inspection, and knowing, as most railroad managers must, that it is difficult to prevent entirely douceurism, to take further liberties with the language, on any road, and that some are perforated by it through and through, as piles in salt water sometimes are by the teredo, it obviously follows that the inspecting and testing department should be made quite independent of those on whose acts it must in a measure pass judgment. The testing department should, in fact, to insure efficiency, be subject to the authority of the general management only, so as to be quite free to pass judgment on those things for which different departments are responsible.

It must be remembered, too, that the testing of materials used on railroads as both a science and an art has not yet advanced very far. Let the principal railroads once establish such departments, and appoint competent men to preside over them, and the attainable knowledge would soon be formulated, and advances be made in many directions. It is quite reasonable to expect that very complete specifications would soon be prepared for almost all the materials to be bought and used, that new methods would be discovered and new instruments devised by which the qualities and the value of such materials could be quickly and certainly ascertained. This cannot be done without calling in the aid of science, or, what is the same thing, a superior quality of common sense.

#### PROSPECTS OF THE MEXICAN RAILWAY.

The Mexican Railway Company, which owns the old road from Vera Cruz to the city of Mexico, which is still the only line connecting the populous tableland of Mexico with the seaboard, in its report for the first half of 1883 shows for the first time the effect of competition, and since that time has felt very decidedly the effect of less activity in railroad construction and reduced shipments of railroad material over its line. Previously the American railroad enterprises in Mexico had been of immense advantage to it. From 1879 to 1882 its gross earnings increased 85 per cent. and its net earnings 111 per cent., and the common stock, which had never paid anything before 1880, yielded a dividend at the rate of 14 per cent. per annum in the last half of 1882. Now considerably more than half of the entire increase in gross earnings in this time was in earnings on imports. As the new railroad construction has caused unusual activity in business in Mexico, employing a great many men at what were there high wages, and putting into circulation a great amount of money brought from abroad (almost for the first time in the history of the country), it must have had a very decided effect on general business, so that the whole traffic of the sole railroad connecting the centre of population with the sea must have been greatly stimulated by it. The new railroads, directly and indirectly, were doubtless the chief cause of the increase in traffic and profits of the Mexican Railway since 1879.

In any ordinary country under ordinary circumstances these railroads would be more advantageous after their completion than during construction. Their main terminus is at the City of Mexico, to which the Mexican Railway is now the sole outlet. The country, however, is not like most others, and the circumstances are peculiar. In spite of the great growth of traffic and earnings on the Mexican Railway, the production of the country, as indicated by its traffic, has grown very little; the exports remain insignificant. In the first half of this year only 7,451 tons of goods for exportation were carried over this road, and with the exception of pulque, the national beverage, the total products of the country carried by these 298 miles of road amounted to but 27,500 tons, which is a little less than in the first half of 1881. The exceptional prosperity due to the new enterprises might well have prevented an increase in exports by causing a greater domestic consumption; but it should have been felt in increased production, and would have been in a country like the United States.

But another thing which makes the Mexican Railway exceptional, and peculiarly liable to have its

revenues greatly affected by competition, is its enormously high rates. The average rate per ton per mile has been more than 12 cents, or about ten times the average in this country. Just so soon as a rival is in position to compete for traffic carried at such rates it is almost sure to make sad work with them. Indeed, the highest rates permitted to the chief American companies by their concessions are much less than this average rate. The Mexican Central's maximum is 8.7 cents per ton per mile for first class, 5.8 for second-class and 3.6 for third-class freight.

This might have little effect on the Mexican Railway if it were to remain the sole approach to the population of Mexico. So far it is, but it will not long remain so. The competition which it feels already is that of a line extending from the city of Mexico eastward to the pulque-producing country, some 50 miles, and the traffic competed for is not through but local. This competition has been felt only in the first half of this year. Compared with the corresponding half of last year the Mexican Railway carried but 7 per cent. less pulque, but it received 41% per cent. less for carrying it—\$113,145 instead of \$194,105—the average rate per ton per mile for carrying it having fallen from 12 cents to 6.8 cents. This competing road, we believe, is to be extended to Vera Cruz, and if so it will compete for the entire import freight of the Mexican Railway, which yielded in the first half of this year no less than 76 per cent. of its total freight earnings, as well as for the through passenger traffic, the trifling export freight, and some of the local freight.

But whether this Mexico-Vera Cruz line is completed or not there will soon be a line from Mexico to the Gulf at Tampico, and lines to various points on the United States border, through which, by comparatively long routes, imports may be carried in bond. These longer routes could not compete with the Mexican Railway if it were not for the enormous rates of the latter, which on imports in the first half of this year averaged 13½ cents per ton per mile, equivalent to \$1.81 per 100 lbs. from Vera Cruz to Mexico, which may be compared with the average through rate of 47 cents per 100 lbs. on the Central Pacific over the 838 miles between Ogden and San Francisco in 1880. Now, however indirect the routes, we may be sure that all the lines will be glad to carry from Gulf ports to the city of Mexico for less than this, and one of the first effects of the opening of a new line from Mexico to a Gulf port, whether it be Tampico or a United States port, will probably be a reduction of one-half or so in the rate of 13½ cents per ton per mile on imports which the Mexican Railway has been able to collect, unless the Mexican Government, to favor the port of Vera Cruz, makes it more difficult to import by other ports. Tampico has a bad harbor, even worse than the very bad one of Vera Cruz, and it may be some time after the railroad is completed before imports can be made conveniently by that place; and Vera Cruz has the enormous advantage of established steamer lines to this country and Europe; but a reduction of \$15 per ton or so on imports will overcome many obstacles. Now as nearly two-thirds of the gross income of the Mexican Railway Company is from imports, a great reduction in the rates on that traffic accompanied by a diversion of some part of it will make an enormous difference in its profits, for with a decrease in traffic no permanent decrease in the expenses per unit of traffic can be expected. This expense in the first half of this year was \$2.97 per train-mile, or 3.3 cents per passenger-mile and about 5 cents per ton-mile, the average train load being about 90 passengers and 50 tons of freight.

We have said that in the first half of this year this road showed the effects of competition for the first time. Notwithstanding this it was a very prosperous half-year, the total traffic and earnings having been greater than in any previous half-year save one, though there was a considerable decrease in net earnings due to making exceptionally large expenditures for maintenance.

For six successive half-years the course of traffic and earnings has been :

	Pass. miles.	Ton miles.	Gross earnings.	Net earnings.
2d half 1880.....	7,287,971	9,080,024	\$1,910,722	\$1,107,402
1st half 1881.....	8,614,824	13,961,769	2,538,493	1,655,901
2d half 1881.....	8,419,469	13,274,617	2,396,007	1,490,487
1st half 1882.....	10,184,921	17,188,615	2,760,548	1,757,037
2d half 1882.....	9,831,500	11,944,879	3,250,737	2,038,017
1st half 1883.....	9,978,205	20,755,500	3,180,100	1,699,167

The decrease in traffic and in gross earnings was therefore trifling. There was no decrease, then, to speak of in the materials carried for the new railroads, which for five successive half-years had been, in tons of 2,204 lbs. (elsewhere we have reduced metric tons to tons of 2,000 lbs.):

1st half 1881	2d half 1881	1st half 1882	2d half 1882	1st half 1883
24,633	13,112	17,818	29,380	28,118

The falling off in the earnings from this traffic has been since June.

The directors say in their report for the first half of the year that in the three months succeeding that half-year, July to September, inclusive, the gross earnings fell off from \$1,504,000 in 1882 to \$1,250,500 this year, and that the decrease in earnings from railroad materials for this time was \$146,600, which is but little more than half of the total decrease. They find reason for surprise that in the three months ending with June the earnings per week from traffic other than railroad materials were \$87,000, and fell in the next three months to \$73,570; but not only did the yellow fever epidemic at Vera Cruz in the latter period affect all the import traffic of the road greatly, but it is probable that the reduced amount of railroad construction, reflected by the great decrease in materials carried, has a considerable effect on the general traffic of the road. The directors say "the Central Railway is nearly approaching the completion of that portion of its line for which materials are supplied from the south, and there has been a temporary inactivity on the part of the National Railway Company in the prosecution of its enterprise within the range to which the Mexican Railway has acted as a channel of supply." This means, too, that the supplies of the men engaged in construction have not been carried to as great an extent by the Mexican Railway, and that the great expenditures for construction have been largely in districts which do not much use that railroad, and this will account in part at least for the decrease in earnings from general traffic.

The directors refuse to estimate the effect of the lines soon to be completed on the traffic and rates of the road, but they endeavor to draw some comfort for the stockholders from a prospect of lower working expenses, the road having been put into much better condition than heretofore by large expenditures on track and rolling stock.

A considerable decrease may be possible, as the expense per train-mile and still more per ton per mile is altogether without precedent in this country; but the great decrease of from 12 to 6½ cents per ton per mile caused by competition in the earnings from the pulque traffic leads us to question whether the extension of the competition to the imports may not reduce the earnings many times more than any possible saving in expenses. A similar reduction in the rates on the foreign freight carried in the last half-year would have taken \$910,000 from the net earnings, which is 53½ per cent. of their whole amount and 61½ per cent. of the working expenses. It will certainly be a marvelous change to reduce the expenses as much as that. If the competition reduces the amount of the import freight as well as the rates on it, there will be a further decrease in the net earnings. Indeed, with a railroad of only moderate difficulties—with any railroad in the United States probably—the average expense per unit of traffic would be a very liberal average receipt, and if the new Mexican roads can afford to work for such an average rate they will soon make short work of through traffic of the Mexican Railway by carrying at rates which will not pay its expenses. As to the cost on these roads, however, there is no definite information. We understand that all the lines are much more favorable for cheap working than the Mexican, but with the thin traffic probable and other disabilities the cost may be very much greater than is common in this country.

#### The Year's Grain Crops and the Grain Movement since July.

This year's grain crops are estimated by the December report of the Department of Agriculture to be "slightly more" than 400 million bushels of wheat against 504 millions last year, 507 millions of oats against 488 millions last year, and "a few millions" less corn than the 1,600 millions which the October report indicated. This, the report says, "makes no difference for inferior quality, which seriously increases the practical shortage." Last year's crop was 1,617 millions. The yield of rye and barley is reported "a little less" than last year, when it was 79 millions. We may say, then, that the total crop of cereals this year is about 2,582 millions of bushels, against 2,686 millions last year, a decrease of 119 millions, or 4½ per cent. The whole of our exports in 1882 (when they were much less than usual, however,) were 163 millions. The decrease this year is chiefly in wheat, which is the most valuable of the grains. The increase of 19 millions in oats will offset about 7 millions of wheat or about 12 millions of corn.

This makes the prospect for grain traffic during the rest of the crop year decidedly bad, for lines west of Chicago at least, for the movement from the farms has been decidedly large so far. The receipts of the

Northwestern markets for the four months from August to November, inclusive, have been :

1880.	1881.	1882.	1883.
125,610,441	96,201,240	80,655,678	1,9,311,731

Thus we see the movement this year has been 30 millions more than last year, when the aggregate crop of small grains was much larger, 33 millions more than in 1881, and even 4 millions more than in 1880, when crops of all kinds were large, and there was a great surplus over from the unprecedented corn crop of 1879. It is true that a large part of the heavy movement this year has been due to the corn crop of last year (though that was not a large one) and probably another large part to an unusual surplus from last year's wheat crop; but after allowing for this, it would seem that there must be a smaller amount of grain to be marketed than usual on the farms in the Northwest.

The feeling that there has been a light grain movement this year, which is quite prevalent, is doubtless due to considering chiefly the receipts at Atlantic ports and the exports. The Atlantic receipts have been for these four months:

1880.	1881.	1882.	1883.
120,481,886	79,649,183	8,109,244	70,143,839

Here it may be said that after all the Atlantic receipts were nearly as large as last year, and were very largely exceeded only in 1880. But we have been led to look upon 1880 as a normal year and 1881 and 1882 as abnormally unfavorable years, which in some respects they were; for the failure of all crops in 1881 caused light shipments of small grains in these months, which were as large as they were only because there was a large surplus of corn on hand from the crop of 1880; and last year, though there were the largest crops of wheat and oats ever known, shipments of corn to the seaboard ceased almost entirely, because there was scarcely any left from the wretched crop of 1881. Moreover, the seaboard receipts in 1880 were not so altogether without precedent as this statement for the four years would make them appear. For four successive years previously they had been, for the four months Aug. 1 to Dec. 1:

1876.	1877.	1878.	1879.
62,661,291	87,137,111	106,154,307	122,994,862

We are not accustomed in this country to see any permanent falling-off in any kind of business. After the great and rapid increase from 1876 to 1879 we might have reconciled ourselves to a cessation of growth, but a reduction of one-third in a single year and no recovery from that for three years is not readily accepted as a natural condition of things; and when we find that we have to go back to the dark ages before 1877 to find seaboard receipts as small as this year, we are astonished.

And in view of the enormous receipts of the Northwestern markets this year, we have a right to be. The receipts of the Northwestern markets in this after-harvest period till the close of navigation grew somewhat like the Atlantic receipts from 1876 to 1879, as shown below :

1876.	1877.	1878.	1879.
73,498,619	86,313,171	99,172,220	120,733,72

But since 1880, as the first table shows, they have not fallen off like the Atlantic receipts, and this year indeed, have been larger than ever before. In 1876 the Northwestern receipts were eleven millions more than the Atlantic receipts; then for three years the Atlantic receipts were a little the larger; but for the last four years (during this period of four months) the receipts of the Northwestern markets have again been larger than the receipts of the Atlantic ports, and the excess this year is truly enormous. This excess of Northwestern over Atlantic receipts for the last four years has been :

1880.	1881.	1882.	1883.
5,138,555	16,552,157	16,556,834	50,167,8

The difference this year is so great as to call for remark and speculation as to what has become of the grain. An unusual accumulation in Western elevators accounts for a comparatively small part of it; the remainder seems to have been absorbed by the country between the West and the seaboard; but why it should have taken so much more than usual is not apparent.

#### The Mobile & Ohio.

The Mobile & Ohio Railroad, which was the first of the railroads completed from the North to the Gulf (it was opened in 1859), seems to make less progress than most other Southern roads. Its passenger traffic in the last fiscal year (to June 30) amounted to 13,385,825 passengers carried one mile, which is at the rate of 35 passengers (less than a car full) carried each way daily over the whole length of the road. This is the largest passenger traffic the road has ever had of late years, however, and the growth of this traffic has been uninterrupted since 1879, when it was greatly reduced by yellow fever. The increase since 1877 is 50 per cent., however, since 1880 27 per cent., since 1882 7½ per cent. This is doing as well as most roads, or better rather; but less than a fifth of the company's earnings is from passengers, and if we go back to 1874 we find that the travel

then was much greater than now. The freight traffic of late years shows no such progress, while elsewhere usually freight has increased much faster than passengers.

The course of the traffic for thirteen years past is shown below, where the figures headed "Passenger" and "Freight" denote millions of passengers and tons carried one mile:

Year.	Passenger.	Freight.	Year.	Passenger.	Freight.
1870-71	15.8	47.0	1877-78	8.7	70.7
1871-72	16.3	57.0	1878-79	7.0	58.4
1872-73	14.2	54.2	1879-80	10.5	80.4
1873-74	9.6	52.1	1880-81	11.3	87.0
1874-75	8.7	46.4	1881-82	12.4	75.2
1875-76	9.0	52.3	1882-83	13.3	75.3
1876-77	9.0	61.4			

Thus the freight traffic last year was but 7½ per cent. more than in 1877-78, and was 13 per cent. less than in 1880-81. Although the last fiscal year coincided with the best cotton year, and the year before with one of the worst this company's freight traffic was nearly the same in both years.

There has not been much new railroad construction to divert the local traffic of this road, but the through traffic must have been largely diverted, first by the extension, improvement and more effective working of the Chicago, St. Louis and New Orleans, especially when it came under the control of the Illinois Central, and then by the consolidation of the Louisville & Nashville system, with through lines to Mobile and New Orleans, assisted by the Cincinnati Southern enterprise and the multiplication of routes south of the Ohio to the Atlantic seaboard.

If we go back to years previous to 1878, however, we find a large increase in freight traffic. For six years ending in 1876 the average was 51½ millions of ton miles. The whole increase was then made in the four years ending in 1880, amounting to 54 per cent., and in the last four years the traffic has been comparatively stationary again, averaging 79½ millions per year, and less in the last two than in the first two years.

That this arrest in growth has been due to the diversion of traffic by rivals is indicated by the course of earning over its next neighbor to the west, the Chicago, St. Louis & New Orleans. We compare them below, noting that those of the last named company are for the calendar year, while those of the Mobile & Ohio are for the year ending with June :

Year.	M. & O. & N. O.	C. St. L.	Year.	M. & O. & N. O.	C. St. L.
1872 ...	\$2,952,507	\$3,180,401	1878 ...	\$2,908,540	\$2,842,434
1873 ...	2,801,127	3,232,159	1879 ...	1,830,620	3,357,305
1874 ...	2,391,019	3,219,316	1880 ...	2,284,615	3,716,902
1875 ...	1,914,347	3,101,871	1881 ...	2,377,817	4,059,151
1876 ...	1,981,509	2,948,200	1882 ...	2,164,274	3,848,537
1877 ...	2,083,274	3,100,595	1883 ...	2,271,058	4,250,519

\* Year to June 30.

To this we may add that for the six months ending with June last, Mobile & Ohio earnings were \$965,379 and 9.8 per cent. more than the year before, while Chicago, St. Louis & New Orleans earnings were \$1,957,160 and 25.8 per cent. more than the year before. The latter has 578 the former 528 miles of road, and neither's mileage has been much increased since they were opened through, the main line of the Mobile road being 493 and that of the New Orleans road 549 miles. For the year ending with June last the earnings of the Chicago, St. Louis & New Orleans road were \$4,250,519. We see then that the last named road may well have been a chief obstacle to the growth of traffic and earnings on the Mobile & Ohio. They are close together and come into competition for local traffic only for a short distance in Kentucky and Tennessee; for most of their length they are very far apart. We see that there has been substantially no increase in earnings on the Mobile & Ohio. In the first six years in our table they averaged \$2,364,000 per year; in the last six, \$2,171,000. With the New Orleans road it has been very different. Its earnings were stationary in the first six years, it is true, averaging \$3,130,000 per year; but the progress since 1878 has been rapid and great, and for the year ending with June last the earnings were \$1,150,000 (37 per cent.) more than in 1877, and \$1,120,000 more than the average of the first six years, and, allowing for the effect of the very bad crops of 1881 on the traffic of 1882, the growth in earnings seems to be progressive.

With regard to net earnings the Mobile & Ohio has fluctuated more than in gross earnings of late years, but they do not increase, as they could not be expected to do when traffic is stationary and competition increasing. The net earnings once reached a million (in 1872), but for the five years ending in 1879 they ranged from \$163,226 to \$370,469, averaging \$298,397. For the last six years they have been:

1877-78. 1878-79. 1879-80. 1880-81. 1881-82. 1882-83.  
\$376,321 \$379,469 \$824,936 \$815,331 \$562,129 \$630,034

In this period the largest net earnings were at the rate of \$1,565 per mile of road. Last year they were \$1,196—little less than 6 per cent. on a capital of \$20,000 per mile.

The obligatory fixed charges of the company amount to but \$456,000 per year, being 6 per cent. on \$7,600,000 of first mortgage bonds. On the \$9,000,000 of "income debentures" interest is payable only when earned.

Most people probably do not know that this company had a land grant. It not only had, but it has one, which it has great difficulty in getting rid of. In 1877 it had 1,181,593 acres; in 1882 this amount had been reduced only 38,251 acres. Unlike some other companies, it does not put an absurd valuation on lands that cannot be sold. Last year it valued its 1,143,342 acres at \$540,705. They are not worth much, it is true, but rather more than some other land grants in the Rocky Mountains and on the plains either side of them, concerning which we see statements that "if the remainder of the company's lands (perhaps chiefly mountain and desert) are worth only as much per acre as

what the company has already sold (usually its choicest agricultural land and that nearest market), the value of it is so many millions, or tens of millions, of dollars."

The earnings per mile of the Mobile & Ohio used to be not very far from those of the Chicago, St. Louis & New Orleans. They were \$8,982 in 1878, for instance, against \$4,918 on the New Orleans road. Now, however, they are far apart, the latter having earned \$7,347 per mile in year ending with June last; the Mobile & Ohio \$4,309—the former 70 per cent. the most. The Mobile & Ohio is not so far below the average of Southern roads as the Illinois Central's Southern Division is above that average, however. Thus compare its \$4,309 per mile with the \$2,954 of the Alabama Great Southern, the \$5,555 of the Nashville & Chattanooga (which is a trunk line connecting two great systems), the \$4,751 of the Richmond & Danville, the \$4,021 of the Virginia Midland, in the calendar year 1882; or the \$4,611 of the Great Central of Georgia system for the year ending with August last, or the \$4,282 of the Georgia Railroad in its last year, not to say the \$1,751 of the Brunswick & Western, the \$3,492 of the Vicksburg & Meridian, or the \$4,011 of the Memphis & Charleston. The comparison is unfavorable with other lines from the Ohio to the Gulf, however. Apparently the others have the advantage in northern connections, and they certainly have the advantage in southern termini. Mobile seems to dwindle in importance, and the Mobile & Ohio cannot utilize its connection with New Orleans to its full value, because that connection is now owned by the Louisville & Nashville, which naturally prefers to carry the through traffic so far as possible over its own road between Mobile and the Ohio River.

The completion of the New Orleans & Northeastern road may possibly enable the Mobile & Ohio to get a larger share of the New Orleans business, though this road will compete with it for local traffic in a fertile valley where they cross. The Northeastern is one of the lines of the Cincinnati, New Orleans & Texas Pacific Company, and so far as possible, doubtless, will exchange traffic with the Alabama Great Southern. But it will hardly be possible to do a Chicago-New Orleans business by way of Cincinnati, and for this the Mobile & Ohio and the New Orleans & Northeastern might make an alliance. The Mobile & Ohio would get a haul of 358 miles on such traffic. The line made by the two roads is 548 miles between Cairo and New Orleans, against 549 by the Chicago, St. Louis & New Orleans. But it can have no connection north of Cairo which is able to command as much traffic as the Illinois Central, though there is another short route to Chicago.

Since the close of its past fiscal year the Mobile & Ohio has made a small gain in gross earnings, and a much larger one in net earnings. For the four months, from July 1 to Oct. 31, it reports working expenses as well as earnings, by which it appears that while the gross earnings have increased only \$26,143, which is less than 4 per cent., the working expenses have been reduced \$55,871, or 10 per cent., so that in net earnings there has been an increase of no less than \$82,014, or 56 per cent. The expenses last year were 79 per cent. of the earnings, this year 68½ per cent.

#### A New Sleeping Car.

The Mann "boudoir car," which is described as everything that is comfortable, luxurious and aristocratic by the company owning it, in a circular which we copy this week, is not, as perhaps is generally supposed, of European origin, but is an American institution, or rather the design of an American, which was first introduced in Europe and is on the Continent used more than any other form of sleeping car. It is, we believe, nearly fifteen years ago that Colonel Mann presented his design to Europeans. At that time Mr. Pullman had made such headway in introducing his cars, had so fully occupied the field, and had acquired such a reputation for his cars, that it was probably the part of discretion for one not fortified by a great capital not to attempt to dispute the field with him. A car even materially better than a Pullman car would not easily have found acceptance, because the traveling public, experienced and inexperienced alike, had been led to believe that there was nothing like a Pullman car, and the work of demonstrating the contrary, even with the help of a superior vehicle, would have required a great deal of time and money, as the Pullman Company had contracts with most of the best routes.

It was an agent of the Pennsylvania Railroad, we believe, who secured a party in California to go east over the Rock Island and the Fort Wayne roads, and quartered them east of Council Bluffs in one of the Pennsylvania "silver palace" Woodruff sleeping cars, and was kept busy all the way to Pittsburgh in convincing them that they were not riding in a Pullman car, the Californians supposing that an unusually handsome and luxurious car must be a Pullman car.

A broad Colonel Mann had an almost unoccupied field. English railroad managers, however, seemed disinclined to even try the innovation, though afterward they adopted Pullman cars to some extent. On the Continent the Mann car found support; a Belgian company was organized to introduce them by contracts with railroad companies something like those of the Pullman Company in this country, and there are now routes in many countries on which they are run, though they are not used to anything like the extent that sleeping cars are used in this country, partly, probably, because there are fewer very long journeys there, partly because the first-class cars are luxurious and generally so nearly empty that the passenger has a good deal of room in them in which to make himself comfortable,

and partly because the rates for sleeping-car accommodations are much greater than here, and are added to much higher first-class fares than are charged on most of our long routes. It is true, however, we believe, that no other sleeping car than the Mann is much used on Continental railroads, though it is not true, as has been said, that it is the only sleeping-car used there, unless the Pullman cars have recently been taken off from some of the routes.

The Mann car was developed to suit European railroads and European wants. In Europe it is a 4-wheeled or 6-wheeled car. The company's circular is thoroughly European, too, laying great stress on the patronage of "royal and noble personages, and the *haute monde* of Europe." The people occupying corresponding public stations in this country (say the New York Board of Aldermen at this end of the New York-Boston line and the Governor of Massachusetts at the other) may be attracted by these aristocratic precedents, though they are not usually credited with courting the "seclusion" which a Mann "boudoir" is said to grant. Prime donnas enjoying an income of \$5,000 a night will naturally prefer aristocratic surroundings, and "professional beauties" and their "friends" may desire the "seclusion" and perhaps the safety claimed for the transverse berths, because the "vital parts" are in the centre and not near the wall of the car in case of accident, will be an attraction to those whose brains are not vital parts.

It is an error to suppose, however, that separate apartments or staterooms like the Mann "boudoir" have not been known here before. Nearly every sleeping car has one, and some have, or used to have, more. They have been made in many different ways, and some of them with almost all imaginable accommodations. Apparently fewer are made now than formerly. The Pullman and other sleeping car companies can probably tell why. We suspect that it is because they are the part of the car which is most usually unsold. Certainly if people had wanted them at a paying price they would have been supplied with all they wanted. Possibly the Mann boudoirs may prove more popular than the sleeping car staterooms. They are, apparently, intended to be a sort of "double-first-class" car, and if in any way the impression can be made to prevail that it is rather vulgar to ride in a sleeping or parlor car, the fortune of the Mann Boudoir Car Company will be made. We do not much care what the royal and noble personages of Europe do, but we are dreadfully afraid that Mrs. Grundy will think we are a little "close." And with the considerable number of enormously wealthy people in this country now, it is possible that there may be a considerable demand for the hire of entire cars; in this, however, the Mann Company will have to meet the competition of an enormously strong corporation which has shown wonderful skill in discovering and catering to the wants of the traveling public. Indeed, the difference between the state of things now and when the Mann car was offered to the European rather than the American public is chiefly that the Mann Company has some strength and reputation now, while then it had none, that there are about 70,000 more miles of railroad here and more rich people.

#### Chicago, Burlington & Quincy Earnings in October.

The earnings from different sources and the working expenses of the Chicago, Burlington & Quincy Railroad for the month of October have been:

	1883.	1882.	Inc. or Dec. P. c.
Passengers .....	\$534,756	\$530,353	-\$4,597 0.8
Freight .....	2,081,262	1,637,253	+ 44,009 27.1
Miscellaneous .....	126,461	93,838	+ 32,623 34.8
Total .....	\$2,742,479	\$2,270,444	+ \$472,035 20.8
Expenses .....	1,115,245	963,387	+ 151,858 15.7

Net earnings .....

\$1,627,234 \$1,307,057 + \$320,177 24.5

This great increase of 20½ per cent. in gross and 24½ per cent. in net earnings is made with scarcely any increase in mileage. But we see there was no increase in passenger earnings, and substantially the whole gain was in freight. The earnings were less than in September, but with that exception they were the largest in the history of the road.

From eleven successive years the gross and net earnings and expenses, and the mileage (approximately) in October have been:

Year.	Miles.	Gross earnings.	Expenses.	Net earnings.
1873	1,288	\$1,187,870	\$547,425	\$640,444
1874	1,268	1,129,192	625,075	503,217
1875	1,342	1,388,610	545,943	642,676
1876	1,620	1,559,260	555,895	803,384
1877	1,656	1,290,114	591,691	698,433
1878	1,733	1,368,348	759,790	608,558
1879	2,597	1,700,032	646,086	1,063,846
1880	2,712	1,924,762	780,590	1,144,202
1881	3,168	2,631,001	868,277	1,322,724
1882	3,230	2,707,444	963,387	1,707,057
1883	3,240	2,742,479	1,115,245	1,627,234

Since 1880 the increase has been 42 per cent. in gross and 41 per cent. in net earnings; since 1881 35 per cent. in gross and 44 per cent. in net. The leading crop on the lines of this road is corn, which has not been a good crop this side of the Missouri since 1880, so that this great progress has been made in the face of at least one very unfavorable condition.

For the ten months ending with October the earnings from different sources, the working expenses and the net earnings of this road have been:

	1883.	1882.	Increase. P. c.
Passenger .....	\$4,429,275	\$3,922,880	\$506,386 12.9
Freight .....	15,926,353	12,554,127	3,372,226 26.8
Miscellaneous .....	1,021,047	847,307	173,740 20.5

Total .....

\$21,376,675 \$17,324,323 \$4,052,352 23.4

Expenses .....

10,706,792 9,033,189 1,673,633 18.5

Net earnings .....

\$10,669,881 \$8,291,184 \$2,378,700 23.7

Thus, for the ten months the percentage of increase in

both gross and net earnings is larger than for October even. This was to be expected, however, for since May the road has been pretty nearly the same in extent as last year; previously, the comparison was with a smaller mileage last year, the Denver Extension having been opened May 29 last year.

We see that there was a large increase in passenger earnings for the ten months, though a slight decrease in October. The increase in freight earnings was at about the same rate in October as previously. There is a very large increase in expenses, though not nearly in proportion to the increase in gross earnings.

This gain of 28% per cent. in net earnings amounts to \$2,378,700. The increase in the capital stock and the funded debt will require about \$1,100,000 more than last year for interest and dividends. Taking this from the increase in net earnings we have \$1,278,700, which is about \$1.88 per share of stock outstanding, and doubtless much more than the profits on traffic exchanged with the Union Pacific ever were.

For eight successive years the gross and net earnings and working expenses of this road have been, for the ten months ending with October :

Year.	Gross earnings.	Expenses.	Net earnings.
1876	\$10,151,015	\$3,196,010	\$4,955,005
1877	10,336,609	5,574,812	4,761,797
1878	11,746,894	6,329,631	5,417,263
1879	12,013,869	6,080,830	5,933,039
1880	17,064,615	7,823,286	9,241,329
1881	17,454,832	8,790,182	8,664,650
1882	17,324,323	9,033,139	8,291,184
1883	21,376,675	10,700,702	10,666,883

There was very little change in the gross earnings after 1880 until this year. In net earnings there was a decrease from 1880 to 1882, amounting to \$950,020 (10 per cent.), but this is transformed by the great gain this year to an increase over 1880 of \$1,428,500 (15% per cent.).

Unless there is a considerable falling off in November and December this company's gross earnings for the year 1883 are likely to be \$5,000,000, and its net earnings \$2,875,000 more than last year.

#### The Cotton Movement.

The cotton movement for the three months of the cotton year ending with November has been actually larger this year than last, though the crop is estimated to be from one-seventh to one-sixth less than last year. The total number of bales received at the seaboard and shipped to Northern consuming districts is reported as follows by the *Commercial and Financial Chronicle*:

	1883.	1882.	1881.
Bales.....	2,681,536	2,646,049	2,477,925
The entire crop is estimated at from 5,700,000 to 5,900,000 bales this year; it was about 6,960,000 last year and 5,456,000 in 1881. Down to the end of November, therefore, 45% per cent. of the crop had been marketed in 1881 and 38 per cent. in 1882. According to the largest estimate of this year's crop, 45% per cent. of it has been marketed in these three months; by the smaller estimate of it, 47 per cent. This heavy movement may help to account for the exceptionally large earnings which the Southern roads have been showing. It seems strange, however, that with prices low so large a proportion of the crop should be hurried forward so early in the season. The drought in summer and the very small "top crop" has doubtless matured the cotton unusually early, so that a much larger proportion of it than usual was gathered before December. If the season had been entirely favorable, not all the cotton would be mature yet, and the crop would not be all gathered till Christmas, and not being gathered it could not be marketed.			
1883.	1882.	1881.	
Bales.....	2,681,536	2,646,049	2,477,925

The "overland movement," or that going north by rail (or river) to points north of the Ohio, was 5 per cent. less this year than last in these three months, and 18 per cent. less than in 1891. All this has long rail haul by Northern railroads; but there is a great deal of cotton hauled long distances by Southern railroads, which is just as truly an "overland movement" as this, as, for instance, cotton brought by rail to Norfolk from Memphis, or more distant points even. The amount going north of the Ohio by rail is but a small fraction of the whole—about 12% per cent. this year. Compared with last year there is a great decrease in the shipments which cross the Mississippi—31 per cent. at St. Louis and 26 per cent. at points further north, the latter doubtless chiefly at Hannibal, the northwestern terminus of the Missouri, Kansas & Texas road, which has a large mileage in Texas. On the other hand, there is a considerable increase in the cotton crossing at Cairo—from 48,027 to 79,470 bales, or 65 per cent., which is but 9,271 bales less than the decrease in the shipments across the Mississippi. It is quite probable that this has been due partly to the opening of the new Texas & St. Louis Railroad across Arkansas and into Texas, which carries to Cairo what otherwise the Iron Mountain road would have carried to St. Louis.

About 14,780 bales (45 per cent.) less than last year crossed the Ohio at Louisville, but at Cincinnati there was some increase, chiefly in the deliveries by the Louisville, Cincinnati & Lexington road.

The figures are :

Crossing Miss. at	1883.	1882.	1881.
St. Louis.....	96,935	141,152	123,226
Above.....	36,867	49,948	39,438
Total.....	133,802	191,100	162,664
Crossing Ohio at			
Cairo.....	79,470	48,027	70,213
Evansville.....	3,831	1,516	2,232
Louisville.....	19,291	33,079	50,512
Cincinnati.....	61,152	54,890	108,375
Total.....	163,744	137,424	231,332
Other routes.....	32,196	20,008	8,323
Total overland.....	320,742	348,532	402,319

This year about 30,000 bales more went over the Ohio

than over the Mississippi, last year about 54,000 bales less. What crosses at Louisville and what is brought to Cincinnati by the Louisville, Cincinnati & Lexington road probably nearly all comes north over the Louisville & Nashville Railroad. The amount of this was:

	1883.	1882.	1881.
Bales.....	47,239	54,866	88,967

The Cincinnati Southern brought to Cincinnati nearly as many bales as last year, but only half as many as in 1881.

In the receipts of the several Atlantic ports, which in the aggregate are nearly the same as last year, there are some notable changes. New Orleans has received 156,520 bales (29 per cent.) more than last year, which is balanced chiefly by decreases of 18,985 bales (12% per cent.) at Mobile, 30,932 (10 per cent.) at Charleston, 50,126 (14 per cent.) at Norfolk, and 45,322 bales (50 per cent.) at the ports north of the Potomac. New Orleans received 28% per cent. of the whole this year and exported 32 per cent.

The total exports for the three months have been :

	1883.	1882.	1881.
Bales.....	1,248,839	1,361,161	1,0,9,961
P. c. of receipts.....	42.8	51.4	42.4

We have thus parted with about the same proportion as in 1881 of the cotton that was forwarded in the first quarter of the crop year.

According to the largest of the crop estimates for this year's crop, there remained to be marketed in the other nine months of the crop year:

	1883.	1882.	1881.
Bales.....	3,218,464	4,313,951	2,978,075

This would make the movement for the remainder of the crop year about 25 per cent. less than last year and 8 per cent. more than in 1881.

#### Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

*Atlantic & Danville*.—Extended from Spring Grove, Va., westward to Otterdam Swamp, 7 miles. Gauge 3 ft.

*Fargo Southern*.—Extended from Wild Rice, Dak., south to Hickson, 6 miles. Track is also laid at Wahpeton, Dak., 2 miles, and from Ortonville, Minn., north 10 miles.

*Green River*.—Extended from Grove, Ky., southwest to Yosemite, 5 miles. Gauge, 3 ft.

*Maine Central*.—Track is laid on the *Shore Line Branch* from Bucksport, Me., eastward 22 miles.

*Northern Pacific*.—Track is laid on the *Wickes Branch* from near Helena, Mon., to Wickes, 20 miles.

*Pittsburgh, Cleveland & Toledo*.—Completed by laying track from a point three miles east of Youngstown, O., westward to Leavittsburg, 20 miles.

*St. Paul, Minneapolis & Manitoba*.—The *Sauk Centre & Northern Branch* is extended from Browerville, Minn., north to Eagle Bend, 11 miles.

*South Florida*.—Extended from Kissimee, Fla., west 20 miles; also extended eastward (on the western end) to Plant City, 15 miles. Gauge, 3 ft.

The following track is reported abandoned and taken up, making a deduction from the track laid:

*Florida Southern*.—Track removed from the branch from Gainesville, Fla., to Hague, 11 miles.

This is a total of 127 miles of new railroad, making 5,946 miles thus far this year. The total new track reported in our columns to the corresponding date for 12 years past has been as follows :

Miles.		Miles.
1,944	1877	1,944
9,648	1878	2,283
7,601	1879	1,264
5,836	1874	1,808
3,594	1873	3,606
2,243	1872	7,065

The statements include main track only, no account being taken of second tracks or other additional tracks or sidings.

**UNION PACIFIC EARNINGS IN OCTOBER** are reported to have been \$49,098 (1.6 per cent.) less this year than last, while the working expenses were \$217,879 (12.7 per cent.) more, which results in a decrease in net earnings of \$206,977, or 16% per cent. The decrease in gross earnings is but trifling, and the increase in expenses is probably due to their being unduly small last year. They were then 48.3 per cent. of the earnings; this year they are 56.2 per cent. The company may be carrying at lower rates this year (it certainly is carrying a portion of its traffic at lower rates, though perhaps not a large part). This is the third month that there has been a large decrease in the net earnings of this road. For the seven months ending with July they were:

	1883.	1882.	Increase. P. c.
Jan. to July.....	\$7,471,640	\$6,963,064	\$508,576 7.3

For the three months following they have been :

	1883.	1882.	Decrease. P. c.
Aug. to Oct.....	\$3,915,287	\$5,124,074	\$1,208,787 23.6

Now this enormous decrease in net earnings has been made at a time when railroad gross earnings have not generally decreased, and when some companies, and especially one near neighbor of the Union Pacific, have made a large increase in net earnings. On the Union Pacific itself the decrease in gross earnings in these three months was but \$476,784, so that no less than \$731,993 of the decrease in net earnings was due to larger working expenses. These for the first seven months and the last three months of the year were :

	1883.	1882.	Inc. or Dec.	P. c.
Jan. to July.....	\$8,509,125	\$9,022,215	Dec. \$513,090	5.7
Aug. to Oct.....	4,715,645	3,983,652	Inc. 731,993	18.4

Ten months...\$13,224,770 \$13,005,867 Inc. \$218,903 16.8

Thus in the first seven months of this year, during which

its gross earnings were almost exactly the same as last year, the Union Pacific's expenses were \$513,000 less; but in the last three months, during which there has been a decrease of \$477,000 in gross earnings, there has been an increase of \$732,000 in expenses. This is a remarkable turn to take. The working expenses were 53% per cent. of the earnings in the first seven months of this year, and were 54.2 in the last three months, or nearly the same; but last year the working expenses were 56.4 per cent. of the earnings in the first seven months of the year and only 43.7 in the last three months.

This indicates very plainly that the great increase in expenses during the last three months reported was due to exceptionally small expenditures last year. There was at the time a good deal of distrust of Union Pacific stock, and the price fell largely, though not much seemed to be known about it. There was no falling-off of gross earnings at that time, but an effort may have been made to increase net earnings by reducing expenses, a practice which could not continue long. Now when the expenses are up to the usual rate again, the comparison with last year shows a great decrease in profits, due not to what has happened this year, but to what happened last year. It is not at all probable that there is any great increase in the average expenses of the Union Pacific Railroad any more than in those of other railroads, though with more mileage and traffic there should be some increase. And when the comparison is with months when the expenses were up to the average last year, we shall probably find this to be true. The course of profits should, therefore, be more correctly shown by the gross than the net earnings, and the falling-off in these has not been serious.

If there has been a great increase in the traffic of the Union Pacific (of which we see no signs), then a large increase in the expenses would probably be permanent, and a large decrease of net earnings, for the gross earnings being less, a larger traffic would mean lower rates, and an increase in the percentage of expenses. With an average rate of 3 cents per ton per mile expenses might well be 40 per cent. of the earnings, but if the rate falls to 2 cents, then the expenses become 60 per cent. There can hardly have been a very great decrease in the average rates of the Union Pacific since last year, however.

**THE IOWA POOL TRAFFIC** seems certainly to have been the subject of some kind of a contract between the Union Pacific, the Chicago, Milwaukee & St. Paul and the Chicago, Rock Island & Pacific. The meeting of the Iowa pool was postponed from Dec. 13 to Dec. 20, and meanwhile the terms of the contract are not made known. Some of the supposed parties to it, however, have taken pains to say that it is an agreement open to all the Union Pacific connections at Council Bluffs, which means, we suppose, that three roads have made such a disposition of the traffic as suits them, and that if the others are willing to accept their settlement of the matter they may do so. One statement is, that the Burlington can be admitted if it puts into the pool all traffic west of the Missouri for which it competes with the Union Pacific. If it is meant that it should pool this traffic between Council Bluffs and those trans-Missouri points with the Union Pacific, there would be much to say in favor of the justice of the requirement; as, if it cuts rates to turn traffic from the Union Pacific three-fourths of all that it secures it diverts by cutting from the other three roads at Council Bluffs; but if it is meant that the non-competitive traffic of its great system of roads west of the Missouri should be divided at Council Bluffs like the Union Pacific traffic, it is difficult to see how anything can be said for it, any more than could be said for such a division wherever there is a junction of two roads. It is as if the Reading, with a line from New York to Harrisburg, should demand an equal share of the through traffic of the Pennsylvania's whole system west of Harrisburg. So very little is known of the scheme proposed, however, that criticism is premature.

In case the new arrangement should result in a contest the situation of the lines is such that it might affect an immense territory northwest and southwest as well as west of Chicago. The Chicago, Burlington & Quincy, in connection with the Denver & Rio Grande, reaches the Union Pacific traffic at many points in Nebraska, at Denver and in Utah. It might so reduce the California rates as to compel a reduction on the Atchison, Topeka & Santa Fe, the Iron Mountain, the Texas & Pacific and other connections of the Southern Pacific and the Atlantic & Pacific, and, perhaps, to some extent, on the Southern Pacific itself. The Burlington and the Rock Island could play havoc with Kansas City and other Missouri River points traffic, and the Northwestern, in competition with the Rock Island and the St. Paul, could destroy St. Paul rates. Then the St. Paul, the Northwestern, the Rock Island and the Burlington are so near together in Iowa that the local rates at most of the stations there could be ruined if they set themselves seriously about it. The Northern Pacific would also be affected if it did a California business; but the Oregon business is so completely in the hands of it and the Union Pacific that it would probably not be much affected by the reduction in California rates that could be made; though it would exasperate the Oregon

long time—but it is not probable that any would desire to disturb the Kansas City or the St. Paul business, though it might be difficult to prevent disturbance at Kansas City and the other "Southwestern" points, whose business might be considerably injured should the Omaha rates be much lower than theirs.

In any such contest the Chicago, Burlington & Quincy and the Union Pacific would be affected most, as they have more of the traffic that would be affected by a war of rates. Of these two the former is in much the better position to endure a war at this time. In the three months ending with October last the Union Pacific suffered a decrease of over \$1,200,000 (21 per cent.) in net earnings, while in the same three months the Chicago, Burlington & Quincy had an increase of \$854,000 (23 per cent.).

**CHICAGO THROUGH RAIL SHIPMENTS EASTWARD** for the last five days of November, *including only what was billed at the new rates*, were 14,126 tons, which is at the rate of only 16,851 tons per week; but doubtless very much more was carried in this time billed at the old rates, as the local report of through and local shipments from Chicago, which almost always are less than the pool shipments, gives a total of 67,492 tons for the week ending Dec. 1. Last year the through shipments at the advanced rate in the first week after the advance were 23,970 tons, and later in December the shipments became extraordinarily heavy. It is not probable that they will be so heavy this year, as they were made great last year by the exceptionally short supply of corn in the East and the pressing demand for it as soon as it was fit to ship. On the other hand, the shipments of provisions are likely to be much greater this year, and if there should arise a demand for wheat, the great stock in store at Chicago would make shipments on the largest scale possible. Of the latter there is no present prospect, however.

The incompleteness of the returns for the last five days of the month makes it impossible to present the total November shipments at present. Besides what was carried at old rates in these five days, which very likely was as much as 45,000 tons, the shipments amounted to 200,461 tons. The total November shipments four years previously have been:

	1879.	1880.	1881.	1882.
Tons.....	168,274	219,840	216,506	214,295

Thus the shipments this year must have been considerably larger than in any other, though allowing for the 19 per cent. allotted to the two new roads, there remained to the old ones somewhat less than in any other year since 1879.

The shipments this year in September were 191,977 tons and in October 195,344, so that there was a large increase in November over the other fall months, probably 45,000 or 50,000 tons over the October shipments. Last year the shipments were 61,000 tons more in November than in October, and in 1880 they were 40,000 tons more; but in 1879 they were 26,000 tons less in November, and in 1881 42,000 less. The course of the shipments has been the ordinary one this year.

Of the shipments of the last five days of November the Chicago & Grand Trunk carried 16.9 per cent., the Michigan Central 16.7, the Lake Shore 14.7, the Nickel Plate 5.2, the Fort Wayne 25.5, the Chicago, St. Louis & Pittsburgh 11.8, the Baltimore & Ohio 4.3, and the Chicago & Atlantic 5.4 per cent. The three Vanderbilt roads had 36.6 per cent. of the whole, while entitled to 43%; the new Pennsylvania roads had 37.3 per cent., instead of the 27% awarded them. Doubtless if the shipments at the old rates were included these percentages would be very different.

For the week ending Dec. 8, the incomplete report of through and local shipments eastward from Chicago of flour, grain and provisions gives a total of 54,632 tons against 50,933 tons in the corresponding week of last year, and 67,492 in the previous week of this year. The decrease from the previous week is doubtless due to the cessation of shipments from points west of Chicago at the old rates.

**THE NEW YORK & NEW ENGLAND RAILROAD**, an abstract of whose report for the fiscal year ending with September last we published last week, makes a very good showing of growth of traffic, but a very bad one of earnings and especially of net earnings. There was a small decrease in passenger traffic (3% per cent.), but an increase of no less than 48 per cent. in freight traffic. The addition to the freight taken was of the profitless kind, however; it was entirely freight interchanged with other roads, and chiefly, doubtless, through freight interchanged with the Erie. Now the average rate received for this through freight was 0.773 cent per ton per mile; while the average cost per ton of carrying all freight was 1.266 cents per ton per mile. Making a large allowance for the larger cost of local freight, it remains probable that the through freight was carried at a loss, and that the great addition to the company's business was positively a damage to it, except so far as it serves as a basis for a profitable traffic hereafter. There seems to have been an undue eagerness to secure a through business and only too great success in securing it, as it was obtained before the road was prepared to carry it, so that it was actually blockaded for a considerable time, about a year ago, and profitable local traffic was driven away as consequence of accepting an unprofitable through business. The local business was nearly the same as the year before, while the through freight was very nearly doubled. The latter was more than two-thirds of the total freight traffic, but it yielded only two-fifths of the freight earnings.

On the whole, the total traffic may be said to have increased

21 per cent. last year, and the train mileage 15 per cent., but the gross earnings only 9 per cent., while the working expenses increased 27% per cent., and the net earnings consequently fell off from \$908,194 to \$555,037, or, allowing for taxes, from \$825,357 to \$408,333. With this result the great addition to through freight traffic can not be considered with unalloyed satisfaction. The larger part of the great increase in expenses was not for maintenance. The whole increase being \$654,000, \$59,945 of it was for maintenance of way and \$73,854 for maintenance of cars. Maintenance of locomotives is charged with fuel, enginemen's and firemen's wages under "motive power," in which there was an increase of \$288,771 (35 per cent.), while in conducting transportation the increase was \$222,923 (26 per cent.). The report speaks of the maintenance expenses having been made exceptionally great by maintenance having been neglected in previous years, but the increase in the maintenance of way expenses was not nearly so great as the increase in other expenses.

A trunk line through traffic, such as this road has been seeking and obtaining, is desirable only when a road is in condition to be worked very cheaply, otherwise the rates obtainable will not equal the expenses. Tracks, sidings, termini, rolling stock need to be ample, of the best quality and in the best condition, otherwise the very narrow margin of profit obtainable will not equal the expenses. Once put in that condition, the New York & New England may be able to add considerably to its profits by the large and growing traffic which it may interchange with the Erie and the Pennsylvania roads.

**FIRST-CLASS PASSENGER TRAVEL IN ENGLAND** tends to decrease, and still more does second class. The third class is the only one that grows; but its growth is so great that there is a decided increase in passenger earnings. If we go back to 1870, we find that the average earnings from first-class passengers per mile of road were £254 and 23.2 per cent. of the total passenger earnings: they rose in amount to £284 in 1875, but were then only 20.8 per cent. of the passenger earnings; and since 1875 they have declined uninterruptedly, and in 1882 were but £203 and 14.9 per cent. of the whole. Since 1875 the decrease has been 29 per cent.

Second-class earnings per mile reached their maximum in 1871, when they were £336 and 28.3 per cent. of the total passenger earnings. The abolition of the second class on the Midland in 1872 caused them to fall off more than a fifth in that year, to £265; but they have kept on falling off ever since, and in 1882 were but £185 and 13.5 per cent. of the whole. These two classes yielded 52.1 per cent. of the passenger earnings in 1870, 37.8 in 1875, but only 28.4 in 1882.

The third-class earnings were £181 and 43.9 per cent. of the whole in 1870. The abolition of the second class on the Midland resulted in greatly increasing the third-class earnings in 1872, when they were £252, and 36 per cent. more than in 1870. But the growth has increased every year since, with one exception; in 1875 they had become £779 (57.2 per cent. of the whole), and in 1882 £388 (65.2 per cent. of the whole). The other passenger earnings are from season tickets, and have increased largely.

Comparing the earnings per mile in 1870 and 1882 we have:

	1882.	1870.	Inc. or Dec.	P. c.
First class.....	£203	£254	Dec. £51	20.0
Second class.....	185	317	Dec. 132	41.6
Third class.....	888	481	Inc. 407	84.6
Season tickets.....	87	44	Inc. 43	97.7
Total.....	£1,383	£1,093	£287	24.4

This does not look well for the profitability of the high-class travel. Trains are becoming more numerous, and accommodations must be supplied on all of them for all classes, while from year to year there is a smaller number of first and second-class passengers to make use of and pay for the accommodations.

Formerly third-class passengers were not carried on all trains, and usually not on fast trains. In 1872 the Midland began to attach third-class coaches on all trains, and nearly all other companies have felt compelled to follow it, many with great reluctance. It would seem now that it would be economical if first-class passengers were restricted to certain trains.

Of course the passenger traffic of the different classes is not in proportion to the passenger earnings from those classes. Roughly speaking it may be said the English second-class fares are 50 per cent. more and first-class fares 100 per cent. more than third-class fares. On this basis, out of every one hundred miles of travel about 9 were by first-class, 11 by second-class and 80 by third-class passengers.

**NEW YORK STREET RAILROADS** do not seem to have suffered much from the competition of the elevated railroads, great as is the number of passengers carried by the latter, and the horse railroad stockholders have very little cause to complain of the dividends which they receive. Fifteen of the city companies have now made their reports for the year ending with September, and 13 of these paid dividends during the year. Four of these lines are "crosstown" roads, which are not injured, but rather benefited by the elevated lines, and three of these paid dividends, the Central Crosstown 3 per cent., the Christopher & Tenth Street 5 per cent., and the Twenty-third Street 8 per cent., the fourth, the Houston, West Street & Pavonia Ferry paying none. Two others are partly crosstown and partly up and down town lines, and both of these paid dividends, the Bleecker Street & Fulton Ferry 1½ per cent. and the Forty-

second & Grand Street Ferry 13 per cent. A seventh line, the Harlem Bridge, Morrisania & Fordham, which paid 5½ per cent., is a suburban line, wholly beyond the district served by the elevated roads.

There remain eight up and down town lines which have to meet the direct competition of the elevated roads, and of these one only—the Ninth Avenue, which has always been a poor company—failed to pay a dividend. The Central Park, North & East River road, which is the belt line following the water front and running outside the elevated roads, paid 8 per cent. The Broadway & Seventh Avenue paid 8½, the Second Avenue and the Sixth Avenue each 10 per cent., although each of them has an elevated line directly over it for a greater part of its route. The Dry Dock, East Broadway & Battery paid 16 per cent. to its stockholders; this, however, is an exceptional road, the main line being comparatively short and running further east than any of the elevated roads, while the company owns two crosstown lines, one of which at least does a very large business. But the Third Avenue road, which has an elevated railroad over it for its whole length, was able to pay its stockholders 17 per cent., while the Eighth Avenue leads all the companies with 18 per cent.

The only remaining line in the city, the Fourth Avenue, is owned by the Harlem Company, which makes no separate report for its street lines. It is generally supposed to be a profitable property, however, as its earnings enable the company to make each year an extra dividend on its whole capital stock beyond that received as rental for its steam road.

While the elevated roads have taken from the horse railroads many of the passengers who made long trips, they have probably increased the number of the more profitable class who take short rides, and the great traffic which they carry has largely been built up and developed by their existence. There seems to be business enough for all the lines, and if it should now be all turned over to the horse railroads, they would be entirely unequal to the task.

**PASSENGER BUSINESS**, according to some of the newspapers, threatens to be made entirely unprofitable by a great war, caused by the Nickel Plate's withdrawal from the passenger pool after having been detected in selling a ticket from Chicago to Baltimore for \$9. The Nickel Plate did not "withdraw" from the passenger pool, because it had never belonged to it; it has very little passenger equipment and runs no through passenger trains connecting with the Eastern roads, and carries next to no through passengers. It is probably true that it sold a ticket at less than the regular rates, and that it had agreed to observe these rates; but to suppose that the other railroads would give up the chances of a profitable business for months perhaps on this account is to credit them with even greater folly than they are guilty of in such matters, which is entirely superfluous. It is, however, a good—if exaggerated illustration of the trifles which are often allowed to cause serious and costly contests, whose only result is losses by all concerned. Here is a railroad whose competition is next to nothing, which is unwilling to go to the expense of providing for a through first-class passenger traffic for the sake of the business it could secure (and it certainly could secure as much as some other roads if it provided for it as well); and yet, because it takes one second-class passenger at less than the rate, some one is ready to make it a reason for carrying all passengers at less than full rates, in which case the offender would lose nothing, because it has nothing to lose, and the danger would be entirely to the road which made the grievance a cause of war, and those which had to accept its reduction in competition. Possibly some one passenger man may have been willing to do this; probably there was nothing in it but a protest against an act that ought to be stopped; but it will serve well enough to show what folly railroad men are credited with, and is not very much worse, perhaps, than some they have been guilty of.

**THIS YEAR'S COTTON CROP**, by the reports made by 1,227 correspondents of Bradstreet's, in 626 of the 657 counties which have more than 500 acres in cotton, amounts to 5,269,000 bales. This journal, collecting the statistics in a similar way, found that its correspondents underestimated the very poor crop of 1881 by 8 per cent. and the very good crop of 1882 also by 8 per cent., and it concludes that this is a constant error of men reporting the crop on the spot. It is hardly safe to make such a generalization from the results of only two years; if it remains substantially true for ten years it may be accepted. Yet the effect on reporters of such an allowance should be that they should revise their methods of estimating, and come nearer to the truth. But actually their estimate this year is far below any other we have seen: and after adding 8 per cent. for the underestimate it makes the crop only 5,692,000 bales, which is about 30,000 bales less than is indicated by the December report of the Department of Agriculture, and 1,300,000 bales less than last year—a decrease of 18½ per cent. This is a large decrease, but the crop was unprecedented last year. For six successive years the crop has been, accepting Bradstreet's estimate for this year:

1878. 1879. 1880. 1881. 1882. 1883.  
5,074,000 5,761,000 6,630,900 5,450,000 6,959,000 5,692,000

Thus the production this year is much less than in 1879 and 1880, as well as less than last year.

Since the publication of Bradstreet's report the Department of Agriculture has issued its statement for Dec. 1, which says that the local estimates of aggregate production have not been diminished, and that the indications favor a crop of about 6,000,000 bales, and it is added that "it is possible that the cotton movement of the year may pass that limit."

NORTHERN PACIFIC EARNINGS, which were \$1,324,000 in October, the first month after its completion, in November were \$1,220,300. But the road has always had larger earnings in October, and the percentage of increase over last year was 62 per cent. in November, and in October it was but 59½ per cent. Thus the November earnings were rather the more favorable. Still, if the increase continues to be 60 per cent. over the previous year, the gross earnings of the road for the year ending with September next will be about \$14,900,000, or nearly what the officers of the company estimated them to be at the time the road was opened. The comparison now, however, is with a time when the company was working but 1,420 miles of road, and 945 miles less than at present. As the road was extended from month to month this mileage increased gradually till the road was completed. Thus in successive months the earnings have been:

Month.	Earnings.	Month.	Earnings.
May . . . . .	\$77,600	September . . . . .	\$1,210,000
June . . . . .	788,700	October . . . . .	1,324,000
July . . . . .	841,000	November . . . . .	1,220,300
August . . . . .	1,016,650		

Thus the earnings in September, when the road was open through but a few days, were nearly as great as in November, and in August, before any through business was done, the earnings were but a sixth less than in November. So far as earnings are affected by increase of road, therefore, they will not gain as much in the spring and summer months next year as they have in the fall months this year. On the other hand there has not been time enough yet to develop the through traffic of the road, much less the local.

#### THE SCRAP HEAP.

##### Train Accident Report—A Correction.

In our record of Train Accidents in October appeared the following:

"On the morning of the 31st a freight train on the Savannah, Florida & Western road was thrown from the track near Waycross, Ga., by the spreading of the rails. A trainman was killed and two others hurt."

We are informed that the account, which was taken from a local paper, was not correct, and that in fact no such accident occurred. There has been no accident on this road caused by the spreading of the rails.

It is impossible to verify all of the numerous reports of accidents which we receive. Where mistakes have been made we are very willing to make the corrections, especially when they reduce the number of accidents reported.

##### He Wanted to Find Out.

There was a chap in New York the other week who disappointed that class of speculators who are always ready to advocate any scheme having even one end resting upon the earth. He had the plan of a railroad across the Rocky Mountains, which he explained as follows:

"I intend the line simply for tourists. It will be 150 miles long, reach an elevation of 12,000 feet, cost \$850,000 per mile, and the operating expenses will be \$8,000 per day."

"What will be the receipts?" asked one of the group around the table on which was spread the maps.

"I have every reason to believe that the line will be patronized by at least 100 tourists daily. The fare will be \$2 each."

"Great Scott! but where or how are you going to make any profit?"

"I dunno," was the dubious reply. "That's what I come to New York to find out."—*Wall Street News.*

##### A Pass for Charity.

A few days ago a man with a weak and humble expression and wearing a summer suit of clothes applied to one of the railroad passenger agents for a dead-head pass to Toledo.

"Why do you want to go to Toledo?"

"To get married."

"And you haven't any money?"

"Not above twenty-five cents."

"Hain't you better be worth your fare to Toledo before taking a wife on your hands to support?"

"You don't understand the case," protested the man. "I'm going to marry a widow worth at least \$5,000, and the first thing I shall do will be to remit you the price of a ticket. I'm poor, and the widow knows it, but she marries me for love."

He protested so long and earnestly that he was finally passed down the road. Two days elapsed, and then a letter was received from him, saying:

"Heaven bless you for your kindness! Reached here all right, and married the widow according to programme. It turns out that she isn't worth a copper. In this emergency may I ask you to pass us both to Detroit, where I have hopes of striking a job?"—*Detroit Free Press.*

#### General Railroad News

##### MEETINGS AND ANNOUNCEMENTS.

###### Meetings.

Meetings will be held as follows:

*Boston & Albany*, annual meeting, at the Meionaon in Boston, at 11 a. m. on Feb. 13.

*Boston & Lowell*, annual meeting, Jan. 2, at 10:30 a. m., at the passenger station in Boston.

*Buffalo, New York & Philadelphia*, special meeting, Dec. 31, to authorize the execution of a consolidated mortgage on the road.

###### Dividends.

Dividends have been declared as follows:

*Albany & Susquehanna* (leased to *Delaware & Hudson Canal Co.*), 3½ per cent., semi-annual, payable Jan. 1.

*Buffalo, New York & Philadelphia*, 1½ per cent., quarterly, on the preferred stock, payable Dec. 26.

*Connecticut River*, 4 per cent., semi-annual, payable Jan. 1 to stockholders of record Dec. 15.

*Fitchburg*, 3 per cent., semi-annual, payable Jan. 1 to stockholders of record Dec. 12.

*Lehigh Valley*, 2 per cent., quarterly, on the preferred stock, payable Jan. 15 to stockholders of record on Dec. 17.

*Missouri Pacific*, 1½ per cent., quarterly, payable Jan. 2. Transfer books close Dec. 20.

*Morris & Essex* (leased to *Delaware, Lackawanna & Western*), 3½ per cent., semi-annual, payable Jan. 2. Transfer books close Dec. 8.

*New York Central & Hudson River*, 2 per cent., quarterly, payable Jan. 15. Transfer books close Dec. 15.

*New York & Harlem* (leased to *New York Central and Hudson River*), 4 per cent., semi-annual, payable Jan. 2. Transfer books close Dec. 15.

*New York, Lackawanna & Western* (leased to *Delaware,*

*Lackawanna & Western*), 1½ per cent., quarterly, payable Jan. 2. Transfer books close Dec. 15.

*Rensselaer & Saratoga* (leased to *Delaware & Hudson Canal Co.*), 4 per cent., semi-annual, payable Jan. 1.

*Western Union Telegraph*, 1½ per cent., quarterly, payable Jan. 15. Transfer books close Dec. 20.

###### Joint Executive Committee Passenger Meeting.

The Joint Executive Committee, Passenger Department, met at the Commissioner's office in New York, Dec. 11. Assistant Commissioner Pierson presiding. The lines represented were the Baltimore & Ohio; Chesapeake & Ohio; Chicago & Atlantic; Chicago, St. Louis & Pittsburgh; Cincinnati, Washington & Baltimore; Cleveland, Columbus, Cincinnati & Indianapolis; Indianapolis & St. Louis; Lake Erie & Western; Lake Shore & Michigan Southern; Michigan Central; New York Central; New York, Lake Erie & Western; New York, Pennsylvania & Ohio; Ohio & Mississippi; Pennsylvania Company; Pennsylvania Railroad; Pittsburgh, Cincinnati & St. Louis; Vandalia Line and the Wabash, St. Louis & Pacific. The Grand Trunk was not represented, but was understood to be willing to join in the action of the meeting.

After a statement of the object of the meeting, the first day was taken up by a discussion of a number of charges made against different lines for cutting rates. A complaint as to Buffalo business was settled by the formation of a local committee, not only to maintain present rates, but to do away with the practice of selling or redeeming rebate tickets on Western business. It was agreed to discontinue the payment of commissions heretofore paid on east-bound business from Dayton.

It is understood that it was agreed to meet the action of certain Western lines in allowing heavy commissions to scalpers by opening a general ticket office in New York where tickets to all Western points will be sold at as low rates as they are offered at the outside brokers' or scalpers' offices. The details of this plan have not been made public.

The second day of the meeting was occupied in the discussion of various charges of cutting rates, and the affairs of several of the interior pools.

#### ELECTIONS AND APPOINTMENTS.

*Almont, Toledo & Lakeview*.—The directors of this new company are: O. S. Axford, Paine Axford, P. T. Butler, E. R. Emmons, E. A. T. Rikey, G. S. Swift, A. S. Warner, Office at Orion, Michigan.

*American Society of Civil Engineers*.—At the regular monthly meeting in New York, Dec. 5, the following candidates were elected members: Wm. A. Drake, Albuquerque, N. M.; Howard Vernon Hinckley, Topeka, Kan.; Wm. L. Lincoln, St. Louis, Mo.; Elbert Nessen, Stillwater, Minn.; Butler B. Roberts, Calcutta, India.

*Baltimore & Delaware Bay*.—The officers of this company (successor to the Kent County) are: President, John F. Bingham; General Manager, Frederick Gerker; Secretary, C. M. Hurley; Chief Engineer, L. D. Bruyn.

*Baltimore & Ohio*.—The new board has re-elected John W. Garrett President for the ensuing year, which will be his 26th consecutive year of service in that office.

*Baltimore & Philadelphia*.—At the annual meeting Dec. 11, the following directors were chosen: Wm. S. Bissell, James B. Washington, Allegheny, Pa.; H. S. Burgess, Thomas M. King, Pittsburgh, Pa.; Robert Garrett, Baltimore; Wm. Canby, Wm. M. Canby, Victor Dupont, Wilmington, Del. The directors elected James B. Washington President; Robert Garrett, Vice-President; John C. Farrar, Secretary; William H. Ijams, Treasurer. This is the company which is building the Delaware and Pennsylvania section of the Baltimore & Ohio's new line to Philadelphia.

*Boston & Maine*.—At the annual meeting in Lawrence, Mass., Dec. 12, the old board was re-elected, as follows: Samuel E. Spring, Portland, Me.; Nathaniel W. Farwell, Lewiston, Me.; Amos Paul, South Newmarket, N. H.; Wm. S. Stevens, Dover, N. H.; Nathaniel G. White, Lawrence, Mass.; James R. Nichols, Haverhill, Mass.; George C. Lord, Newton, Mass.; Nathaniel J. Bradlee, John Felt Osgood, Boston.

*Boston, Winthrop & Shore*.—The directors of this consolidated company, chosen Dec. 11, are: Francis French, Samuel W. Hale, Keene, N. H.; John H. Buttrick, Lowell, Mass.; Clarence A. Parks, Wakefield, Mass.; Alpheus P. Blake, David Loring, Arthur D. McLellan, Boston. The board elected Samuel W. Hale President; John H. Buttrick, Vice-President; Clarence A. Parks, Clerk and Treasurer; Alpheus P. Blake, Manager.

*Burlington & Northwestern*.—The officers of this company are: President, T. W. Barhydt; Treasurer, R. M. Green; Auditor, J. A. Ostrander; Assistant Superintendent, W. B. Jones; General Freight and Passenger Agent, E. S. Edger. Offices in Burlington, Iowa.

*Central Tunnel Co.*.—The officers of this company are: President, John Cochran; Vice-President, Wm. E. Worthen; Directors, Stephen O. Lockwood, C. B. Mesirol, W. C. Nicoll, O. P. Pell, Eugene Schieffelin, Spencer D. Schuyler, Gouverneur Tilton; Secretary, Wm. Kent. Treasurer, Henry H. Stetson; Chief Engineer, John Schuyler, Office in New York City.

*Charlotte, Columbia & Augusta*.—At the annual meeting in Columbia, S. C., last week the old directors were re-elected. The board subsequently elected A. C. Haskell President; A. L. Rives, Vice-President and General Manager; G. R. Talcott, Superintendent; C. Bouknight, Secretary; J. C. B. Smith, Treasurer; John Craig, Auditor.

*Chicago & Atlantic*.—The following order from President Jewett is dated Nov. 26:

"Until the vacancy in the office of Vice-President of this company, caused by the death of Col. J. Condit Smith, is filled, the duties which, under the by-laws and organization of the company, are devolved upon the Vice-President, will be devolved upon the General Superintendent. All officers, agents and employees of the company will report to and obey him accordingly."

*Chicago & Eastern Illinois*.—The office of General Manager having been abolished General Superintendent O. S. Lyford assumes control of the road in all its departments.

Mr. C. C. Hill has been appointed Traveling Passenger Agent. He will have charge of all outside passenger interests, including the distribution of advertising matter, etc. His address will be No. 101 Clark street, Chicago.

*Cincinnati, Van Wert & Michigan*.—Mr. H. R. Johnson has been appointed General Freight Agent.

*Cleveland, Delphos & St. Louis*.—Mr. Wm. Semple has been chosen President in place of A. G. Hatry.

*Delaware & Hudson Canal Co.*.—Mr. Lyman O. Rose has been appointed Superintendent of the Canal Department, to date from Jan. 1 next. He has been on the canal for many years, and has been Division Superintendent for 12 years.

*Detroit, Bay City & Alpena*.—Mr. R. A. Alger is President and General Manager of this new road, and Mr. Milo Eastman is General Superintendent.

*Eastern*.—At the annual meeting in Boston, Dec. 12, the following directors were chosen: By the bondholders, Frank Jones, Samuel C. Lawrence, George S. Morison, Richard Olney, Jacob C. Rogers, Arthur Sewall; by the stockholders, Francis J. Amory, Charles Houghton, Thomas W. Hyde.

*Green River*.—The officers of this company are: President, E. Zimmerman, Cincinnati; Vice-President, J. J. Perkins, Cincinnati; Superintendent, George B. Harper, Grove, Ky.; General Freight and Passenger Agent, R. A. Holden, Jr., Grove, Ky.; Master Mechanic, George Lewis, Grove, Ky. The company was formerly the Cincinnati, Green River & Nashville.

*Marine*.—At the annual meeting in New York, Dec. 11, the following directors were chosen: Austin Corbin, F. W. Dunton, J. Rogers Maxwell, Henry W. Maxwell, Gilbert S. Moulton, J. B. Upham, Charles L. Flint.

*Michigan Central*.—Mr. J. E. Morford has been appointed Superintendent of the Canada Southern Division, with office at St. Thomas, Ont., in place of E. P. Murray, who has gone to the Toledo, Cincinnati & St. Louis road. Mr. Morford was recently Assistant Superintendent of the Detroit Division.

*Milford & Woonsocket*.—Mr. H. W. Young has been appointed Auditor, with office in Milford, Mass., and will have entire charge of the accounts.

*New York & New England*.—At the annual meeting in Boston, Dec. 11, the following directors were chosen: Charles P. Clark, Newton, Mass.; Wm. F. Sayles, Pawtucket, R. I.; Jesse Metcalf, Providence, R. I.; Frederick J. Kingsbury, Waterbury, Conn.; George M. Landers, New Britain, Conn.; Henry C. Robinson, Hartford, Conn.; Geo. B. Roberts, Philadelphia; Cyrus W. Field, Charles G. Francklyn, Jay Gould, George G. Haven, Hugh J. Jewett Russell Sage, Wm. Seward Webb, New York; Eustace C. Fritz, Jonas H. French, Wm. T. Hart, Francis S. Higginson, Thomas Nickerson, Boston. The new directors are Charles P. Clark, Thomas Nickerson, Francis L. Higgins, George G. Haven and Charles C. Francklyn, in place of Messrs. James H. Wilson, Le Grand B. Cannon, R. Suydam Grant, Wm. E. Barrows and Wm. R. Francklyn. The board elected Charles P. Clark President, in place of Gen. James H. Wilson, and re-elected James W. Perkins Secretary and George B. Phippen Treasurer.

*New York, Providence & Boston*.—At the annual meeting in Providence, Dec. 12, the following directors were chosen: Robert Knight, Providence, R. I.; Henry Howard, Coventry, R. I.; Nathan F. Dixon, Westerly, R. I.; A. S. Matthews, Stonington, Conn.; Samuel D. Babcock, D. S. Babcock, Wm. P. Dixon, J. Boorman Johnston, George M. Miller, Edward Morgan, Henry Morgan, New York.

*Richmond & Allegheny*.—At the annual meeting in Richmond, Va., the old directors were re-elected, as follows: Decatur Axtell, Wm. H. Barnum, C. S. Brice, M. P. Bush, F. O. French, J. L. Humfreville, Lawrence Myers, Wm. L. Scott, Samuel Shethar, John W. Simpson, A. Y. Stokes, Samuel Thomas, C. E. Wortham.

*Richmond & Danville*.—At the annual meeting in Richmond, Va., Dec. 12, the following were elected: President, A. S. Buford; Directors, George F. Baker, Calvin S. Brice, W. P. Clyde, H. C. Fahnestock, John McAnearney, George F. Scott, George I. Seney, Samuel Thomas. There was no change made in the board.

*Rumford Falls & Buckfield*.—At the annual meeting last week the following directors were chosen: Otis Hayford, Canton, Me.; N. L. Marshall, West Paris, Me.; S. C. Andrews, R. C. Bradford, Charles R. Milliken, Wm. H. Moulton, Wm. L. Putnam, Portland, Me. The board elected Wm. L. Putnam, President; Otis Hayford, Vice-President; L. L. Lincoln, Superintendent; S. C. Andrews, Treasurer.

*St. Louis & San Francisco*.—Mr. A. Veech has been appointed Superintendent of the St. Louis Division, from St. Louis to Springfield, Mo., to take effect Jan. 1. He has agent at Pacific, Mo., for several years.

*Texas Trunk*.—Mr. Hugh Irwin, of Marshall, Tex., has been appointed Superintendent of this road.

*Toledo, Cincinnati & St. Louis*.—The following circulars have been issued by Mr. W. J. Craig, Receiver, from his office in Toledo, Ohio:

"Mr. E. E. Dwight having resigned the Receivership of the Toledo, Cincinnati & St. Louis Railroad, in the Seventh Circuit Court of the United States, the undersigned has been appointed in his stead, and is now, by the order of the United States Courts, the duly appointed Receiver, and is in possession of all the lines, branches and other property of said railroad company."

"Mr. E. E. Dwight having resigned the position of General Manager all employees are hereby directed to continue in the discharge of their respective duties and report to W. J. Craig, Receiver, until further notice."

"Mr. E. P. Murray is appointed General Superintendent, to have charge of transportation, roadway and machinery. Appointment in effect Dec. 10, 1863."

*Wallkill Valley*.—At the annual meeting, Dec. 12, the following directors were chosen: E. F. Winslow, Theodore Houston, Alexander Taylor, Walter Katte, John L. Nisbet, Howard Mansfield, Horace Porter, Conrad N. Jordan, Charles Bard, George H. Sharpe, Samuel D. Cokendall, F. E. Worcester, Charles Paine. The road is controlled by the New York, West Shore & Buffalo.

*Western North Carolina*.—At the annual meeting in Salisbury, N. C., Dec. 5, the following directors were chosen: A. B. Andrews, W. E. Anderson, Raleigh, N. C.; S. H. Wiley, Salisbury, N. C.; J. E. Rankin, Asheville, N. C.; A. S. Buford, Richmond, Va.; Frank Coxe, Philadelphia; C. S. Brice, W. P. Clyde, George S. Scott, New York. The board re-elected A. B. Andrews President; Frank Coxe, Vice-President; A. L. Rives, Second Vice-President; V. E. McBee, Superintendent; George P. Erwin, Secretary and Treasurer.

#### PERSONAL.

It is announced that Mr. E. T. Jeffery has withdrawn his resignation as General Superintendent of the Illinois Central, and has agreed to remain with the road.

Mr. George R. Clapp has resigned his position as Assistant Freight Agent of the Detroit, Bay City & Alpena road to accept the agency of the American Express Co. at Au Sable and Osceola.

Mr. John Graham, Jr., has resigned his office as engineer of the New River Division of the Norfolk & Western road, and has accepted the position of General Manager of the Camden Iron Works in Camden, N. J., the extensive establishment formerly known as the Starr Iron Works.

—Mr. E. P. Murray, having resigned his office as Division Superintendent of the Canada Southern road, to accept the position of General Superintendent of the Toledo, Cincinnati & St. Louis road, he was entertained at a farewell dinner by a number of citizens of St. Thomas, Ont., on the evening of Dec. 7. On this occasion Mr. Murray received many gratifying assurances of friendship and good will.

—Mr. Emil Low, formerly of Pittsburgh, but recently Engineer of the Mexican Central road, was injured some two years ago by a premature explosion of dynamite in a silver mine, which he was visiting in Guanajuato, Mexico. Mr. Low returned to Pittsburgh some time ago, having recovered from his injuries with the exception of a swelling upon his cheek, which was rather annoying and painful. Recently he decided to explore this, and was rewarded by discovering in it a good-sized chunk of silver ore. He had been for two years a traveling silver mine, but says that he did not enjoy the situation.

—Col. C. O. Sanford, who died in Petersburg, Va., Nov. 29, aged 72 years, was one of the oldest civil engineers in the South. He was born in New York, but went to Virginia while still a young man, and was employed on several railroads in that state. Later he had charge of the construction of the South Side road, now part of the Norfolk & Western, the Chatham Railroad, now the Raleigh & Augusta Air Line, the Augusta Canal and other important works. He was Superintendent of the Petersburg Railroad from 1856 to 1863, and President for several years. Lately he has retired from active work.

—The London *Railway News* of late date has the following statement in its legal news concerning Mr. James McHenry, who is reputed to be the proprietor of that paper:

"Registration has been allowed of resolutions passed by creditors accepting 20s. in the pound, payable by installments extending over a period of about two years. The debtor, who filed a liquidation petition in August, 1879, was well known as a financier in connection with the Erie Railway Company; and his balance-sheet returned liabilities amounting to £388,813, and disputed claims £750,437; assets £105,846, but of the prospective value of a million sterling. Payment of 20s. in the pound to the creditors is secured. Mr. Finlay Knight appeared in support of the application; Mr. Morris for the Erie Railway Company; and Messrs. Freshfield and Messrs. Brandon for creditors."

—At the annual meeting of the New York & New England Railroad Co. in Boston, Dec. 11, Mr. F. J. Kingsbury of Waterbury, Conn., said he desired in his own behalf, and at the request of several stockholders, to offer the following resolution:

"Resolved, That General Wilson deserves the thanks of the stockholders of this road for his faithful services during four very trying and important years in its development, and that in retiring from his connection with this road he takes with him their best wishes for his happiness and success."

The resolution was seconded in eloquent and complimentary language by Col. Jonas H. French of Gloucester, and adopted by a unanimous vote. General Wilson briefly responded, remarking that he was gratified at this expression of good will, but that he had within him something more valuable—a confidence that he deserved it.

—Mr. Ethan Ferris Bishop, President of the Naugatuck Railroad Co., died at his residence in Bridgeport, Conn., Dec. 7, aged 58 years. He was born in Madison, N. J., in 1825, and was the son of Alfred Bishop, who was in his day a large railroad contractor. He was partner in his father's business, and after that gentleman's death he took up and completed the contracts on hand, and afterward engaged in others on his own account. About 1860 he was considered a very wealthy man, but afterward lost nearly all his fortune by speculation, but he went to work again and accumulated a second fortune of considerable amount. Mr. Bishop was an exceedingly active man, and besides all his business care he was for a number of years pastor of a church in Bridgeport, which he built and maintained at his own expense. His brother, Mr. Wm. D. Bishop, was for a number of years President of the New York, New Haven & Hartford Company.

—At the meeting of the directors of the Baltimore & Ohio Co. in Baltimore, Dec. 12, after the unanimous election of Mr. John W. Garrett as President of the road for his twenty-sixth consecutive term, that gentleman made a brief address, in which he said: "When I became your executive in 1858 the length of the roads under your control was but 514 miles, and their cost \$32,000,000. Now the properties owned and controlled by the Baltimore & Ohio Co. aggregate 1,595 miles and cost more than \$144,000,000. When the Baltimore & Ohio Railroad was incorporated in 1827 the then novel and stupendous enterprise was undertaken by our great predecessors of building a railway to unite the waters of the Chesapeake with those of the Ohio, it being then believed that the whole capital required to construct and equip the line would be but \$3,000,000, and that sum was fixed in the charter for this work." \*

—At the close of the first fiscal year of the present administration, Sept. 30, 1859, the aggregate revenues were \$4,301,009.27; for the past fiscal year they have been nearly \$20,000,000. In view of the large enterprises in which the company is now engaged, which are being so rapidly and successfully prosecuted, and which are so calculated to increase the usefulness and influence of our community and the desirable results for it and the regions traversed by our lines, I feel that it is proper that I should remain to co-operate with you in their completion. While, therefore, neither wishing nor intending to continue much longer in the interesting and important position to which you have called me, yet with strong desire to serve the interests with which we have been so long identified, I again accept the trust which you tender with so much cordiality and unanimity."

#### TRAFFIC AND EARNINGS.

##### Coal.

Anthracite coal tonnages for the eleven months ending Dec. 1 are reported as follows, the tonnage in each case being only that originating on the road to which it is credited:

1883.	1882.	Inc. or Dec.	P. c.
Phil. & Reading.....	11,098,173	10,680,896	I. 417,277 3.9
Shamokin & Summit Br	1,147,144	1,158,210	D. 11,060 0.9
Sun., Hazleton & W.	152,500	155,819	D. 3,310 2.1
North & West Branch..	451,852	488,026	L. 451,852
Pennsylvania Canal....	486,128	488,026	L. 2,102 0.4
Lehigh Valley.....	5,980,874	5,477,957	L. 482,917 6.8
Pennsylvania & N. Y.	200,878	170,249	L. 21,620 12.1
Del., Lack., & Western	4,671,671	4,295,237	L. 446,434 10.6
Del. & Hud. Canal Co.	3,839,175	3,16,973	L. 502,202 15.1
Pennsylvania Coal Co.	1,391,008	1,328,142	L. 62,864 4.7
State Line & Sullivan..	63,664	58,033	I. 4,731 8.0

Total anthracite..... 29,463,065 27,085,442 I. 2,377,621 8.8

The North & West Branch road was not opened last year. New Jersey Central tonnage is included with the Reading for the whole of both years.

The total tonnage reported for the corresponding period for eight years has been as follows:

1883.....	29,463,065	1879.....	24,469,930
	27,085,442	1878.....	16,152,525
	26,100,763	1877.....	18,821,378
	21,924,560	1876.....	16,686,187

The statements above are given as showing the tendency and division of the trade more in detail than the report of the Official Accountant; the latter, however, is the only statement which can be relied on as entirely correct in its totals, although it is more condensed in form than the one here given.

The anthracite coal companies have decided to adopt the half-time system for the remainder of this month, and it is announced that work will be stopped on Dec. 18, 14, 15, 20, 21, 22, 24, 25 and 26. Probably there will be very little real reduction in the output, especially as three of the days named fall in the holiday week, when there is usually very little work done, whether the stoppage is nominally made or not. The notice of the half-time order has produced no effect on the tidewater markets, and prices continue to have a downward tendency.

Semi-bituminous tonnages for the eleven months ending Dec. 1 are reported as follows:

1883.....	1882.....	Inc. or Dec.	P. c.
Cumberland, all lines.....	2,333,123	1,342,403	I. 990,720 73.8
Huntingdon & Broad Top..	180,644	253,339	D. 72,695 28.7
East Broad Top.....	40,181	84,670	D. 44,480 52.5
Tyrone & Clearfield.....	2,607,391	2,587,489	L. 19,902 0.8
Bellefonte & Snow Shoe..	235,139	215,694	I. 19,443 9.0

Total semi-bituminous..... 5,396,478 4,483,597 I. 912,881 20.4

The Cumberland mines were idle from March 15 to Sept. 1 in 1882 on account of the miners' strike. The absence of Cumberland from the market increased the demand for other coals, especially Broad Top, at that time. Clearfield holds its own well, notwithstanding the increased output of Cumberland this year.

Bituminous coal tonnages for the eleven months are reported as follows:

1883.....	1882.....	Inc. or Dec.	P. c.
Barclay R. R. & Coal Co..	305,722	334,665	D. 28,943 8.6
Allegheny Region, Pa. R. R.	417,004	417,004	D. 70,694 15.4
Penn and Westmoreland..	1,288,422	1,163,135	L. 117,287 10.1
West Penna. R. R.....	361,228	324,687	L. 35,541 11.2
Southwest Penna. R. R..	112,204	100,211	L. 12,083 12.0
Pittsburgh Region, Pa. R. R.	578,903	598,446	D. 19,543 3.3

Total bituminous..... 3,057,663 3,016,332 I. 41,331 1.4

There was a considerable increase in the gas coals and in those used chiefly for steam and general purposes. The falling off in some districts may probably be traced to a lighter demand from the iron trade.

Coke tonnages for the eleven months are reported as follows:

1883.....	1882.....	Inc. or Dec.	P. c.
Bellefonte & Snow Shoe.	17,181	19,625	D. 2,444 12.4
Allegheny Region, Pa. R. R.	73,846	102,336	D. 28,490 27.7
Peen and Westmoreland.	202,067	244,543	D. 42,476 17.4
West Penna. R. R.....	106,734	107,756	D. 1,022 0.9
Southwest Penna. R. R. R. 1,940,41	1,651,835	L. 288,706	17.5
Connellsdale { Pa. R. R.	548,148	509,596	I. 38,552 7.6

Total coke..... 2,888,517 2,635,601 I. 252,826 9.6

These tonnages are all over the Pennsylvania Railroad and its branches. The increase was entirely from the Southwest Pennsylvania and the Pittsburgh Region.

The coal tonnage of the Pennsylvania Railroad Division of the Pennsylvania Railroad, for the eleven months ending Dec. 1 was as follows:

1883.....	From other	1882.....	Total	Total
Anthracite.....	604,550	1,672,668	2,277,218	1,641,182
Semi-bituminous.....	2,842,570	575,725	3,418,295	3,239,282
Bituminous.....	2,751,831	6,285	2,758,116	2,681,706
Coke.....	2,359,622	528,895	2,888,517	2,635,601

Total..... 8,558,573 2,783,573 11,342,146 10,197,861

The total increase for the eleven months was 1,144,285 tons, or 11.2 per cent. More than half the whole increase was in anthracite coal. The statement does not include the tonnage of the Philadelphia & Erie line, nor the 1,582,775 tons of anthracite carried over the Belvidere Division. For November (four weeks) the total tonnage was: Coal, 878,586; coke, 259,095; total, 1,132,681 tons.

The coal tonnage of the Lehigh Valley Railroad for the fiscal year ending Nov. 30 was as follows:

1883.....	1882.....	Inc. or Dec.	P. c.
Anthracite.....	6,527,912	6,257,150	I. 270,753 4.3
Bituminous.....	64,734	78,982	D. 14,248 18.0
Total.....	6,592,646	6,336,141	I. 256,505 4.0

The anthracite last year was from the following districts:

Wyoming, 1,431,150; Hazleton, 8,028,037; Beaver Meadow, 557,208; Mahanoy, 1,511,337; Mauch Chunk, etc., 185; total, 6,527,912 tons. The bituminous coal was nearly all received from the Pennsylvania & New York road.

Actual tonnage passing over the Pennsylvania & New York road for the fiscal year ending Nov. 30 was as follows:

1883.....	1882.....	Inc. or Dec.	P. c.
Anthracite.....	1,262,785	1,076,967	L. 185,818 9.1
Bituminous.....	351,114	364,310	D. 33,205 9.1

Total..... 1,503,899 1,441,286 I. 152,613 10.6

The greater part of the anthracite is received from the Lehigh Valley road, of which this line is an extension. The bituminous coal comes chiefly from the Barclay and Long Valley mines.

The coal tonnage of the Chesapeake & Ohio road for the eleven months ending Oct. 31 was as follows:

1883.....	1882.....	Increase.	P. c.
Coal.....	741,387	714,186	D. 27,201 5.8
Coke.....	86,857	76,135	I. 10,722 14.1
Total.....	828,244	790,321	I. 37,923 4.8

The coal was of the following kinds this year: Cannel, 20,628; splint and block, 86,085; gas coal, 308,289; New River and other steam coals, 831,390; total, 741,387 tons. The increase was in New River and gas coals, the cannel and block coals showing a decrease. Shipments by way of Newark River continue to increase.

Chicago

made. The shipments down the Mississippi amounted to 148,049 bushels, or 3.8 per cent. of the whole.

The Atlantic receipts for the week were 762,000 bushels less than in the corresponding week of last year, and less also than in 1880 and 1879; but they were 256,000 bushels more than in the previous week of this year and the largest since October.

For this week ending Dec. 1, the exports of the Atlantic ports have been:

	1880.	1881.	1882.	1883.
Flour, bbls.	197,160	127,013	176,148	133,469
Grain, bus.	3,088,380	3,329,266	1,455,491	1,237,480

Thus the exports this year (including flour), were about 310,000 bushels (14 per cent.) less than last year, 1,063,000 less than in 1881, and 2,137,000 less than in 1880.

San Francisco exports for the five months of the California crop year from July 1 to Nov. 30 were as follows, flour in barrels and wheat in bushels, flour being reduced to wheat in the totals:

	1883.	1882.	Inc. or Dec.	P. c.
Flour.....	535,122	459,746	L 75,376	16.4
Wheat.....	9,720,972	12,577,902	D. 2,856,930	22.7
Total, bushels.	12,306,582	14,876,632	D. 2,480,050	16.7

In September and October 86,033 bushels of wheat were shipped east by rail.

Exports of California barley by sea for the five months of the crop year to Nov. 30 were 106,367 centals. Shipments overland were 15,767, making a total of 122,134 centals.

#### Cotton.

Cotton movement for the week ending Dec. 7 is reported as follows, in bales:

	—Interior markets.—	—Seaports.—
Receipts.	Shipments.	Receipts.
1883.....	162,854	150,941
1882.....	165,161	149,485

The total receipts at interior markets for the cotton year to Dec. 7 were 1,716,002 bales; the stock Dec. 7 was 386,477 bales.

The total receipts at the seaports for the cotton year to Dec. 7 were 2,685,768 bales. The exports for the same period were 1,406,731 bales, and the stock Dec. 7 was 1,041,162 bales.

#### Chicago Lake Commerce in 1883.

The Chicago Tribune of Dec. 5 presents full statistics of the lake commerce of that port down to Dec. 1, after which there could be little more—only for cargoes of lumber. It prefices the statement as follows:

"The following careful and accurate compilation of the amount of lake commerce transacted at this port during the current season shows a noticeable falling off in the number of arrivals and clearances of vessels as compared with the season of 1882. This fact is accounted for by the late opening and early closing of navigation. In 1882 a large number of lumber vessels were running in March, while the first of the grain fleet passed through the Straits April 5. This season but very few craft were fitted out before the middle of April, and the Straits were not passable until the 28th.

"April 30 a fleet composed of 38 vessels, laden with 1,389,522 bushels of grain, set sail for the lower lakes. This was really the commencement of the season. Vessels received from 3½ cents to 4 cents per bushel on corn to Buffalo. Shipments continued active for several weeks, but rates steadily declined, and in June and July cargoes of corn were shipped to Buffalo as low as 2 cents per bushel, and it is even alleged that one large steamship was loaded at 1½ cents. These low rates on grain forced a large number of vessels into the ore trade. The latter part of July grain vessels were in better demand, and in August the shipments of grain were in excess of any other month during the season. Rates advanced to a maximum of 4½ cents on corn and 5 cents on wheat to Buffalo, on straight charters, and some of the line boats obtained better rates on cargoes of small lots. This created a boom of financial prosperity for vessel men, but it was of short duration. The sudden upward tendency of the corn market materially affected the shipments. There was a large quantity of wheat in store, but it was in the hands of speculators who were holding it for a higher market. They are still holding it with a cast-iron grip. The shipments of wheat for the entire season were less than one-half as large as last year. In the comparative statements given below the figures for this year include only the aggregate business transacted from the opening of the season to Dec. 1, while the figures for 1882 represent the entire season. This will make but very little difference in the annual report, as navigation is practically at an end and grain shipments already closed."

"Lumber-carriers have been in good demand, and some of them have made money. Freights have been uniformly low, although as good as obtained last year. Rates have fluctuated from \$1.25 to \$2.25 per 1,000 on cargoes of lumber from Muskegon to Chicago. The rates from all other ports on Lake Michigan are on this basis. Coarse freights, such as ties, posts, telegraph poles and wood, have been somewhat firmer. The rates on ties from Green Bay have run from 7½ cents to 11 cents. The gross receipts of forest products do not differ much from last year."

"The receipts of coal have been about the same as last year. Rates have varied according to the supply and demand. The maximum rate from Buffalo was \$1.50 per ton and the minimum 40 cents."

"The disparity in the aggregate receipts of iron-ore and pig-iron as shown in the report is in a measure due to the fact that last season all manifests for the district were filed at the Custom-House at this port, while this year the receipts at South Chicago are not given."

The statement of lake commerce given by the Tribune in this article we summarize below:

Arrivals:	1883.	1882.	Decrease.	P. c.
No. vessels.....	11,803	13,351	1,548	11.6
Tonnage.....	3,756,876	4,849,950	1,093,074	22.5

Clearances:	1883.	1882.	Decrease.	P. c.
No. vessels.....	11,925	13,626	1,701	12.5
Tonnage.....	3,902,513	4,904,999	942,486	19.2

Total:	1883.	1882.	Decrease.	P. c.
Vessels.....	23,728	26,977	3,249	12.0
Tonnage.....	7,719,389	9,754,949	2,035,560	20.9

Shipments of	1883.	1882.	Inc. or Dec.	P. c.
Flour, bbls.	775,523	792,764	D. 17,241	2.2
Grain, bu.	62,761,007	50,782,325	L 11,079,282	23.6
Seeds, bu.	1,877,415	3,305,453	D. 2,328,038	70.4
Provisions, tons.	18,976	10,585	L 8,391	79.2

Receipts of	1883.	1882.	Decrease.	P. c.
Coal, tons....	888,450	933,043	D. 44,593	4.8
Iron ore.....	64,689	235,161	D. 170,472	72.5
Pig iron.....	22,210	35,715	D. 13,505	38.0
Salt, tons.....	14,724	15,181	D. 467	3.1
“ bbls.....	175,449	326,666	D. 151,541	46.2
“ sacks.....	62,883	27,782	L 35,101	126.0
Lumber, M. ft.	1,707,150	1,872,936	D. 165,796	8.8
Shingles, M. ft.	1,114,617	868,279	L 246,338	28.4
Railroad ties, No.	1,714,942	3,789,376	D. 2,074,336	54.7
Posts, No. ....	2,802,407	2,437,319	L 365,088	15.0

The tonnage to and from the lower lakes is determined almost entirely by the grain shipments, and not by receipts of coal, salt, etc., which require but part of the capacity of returning grain-carriers.

The ore receipts are from Lake Superior, and require vessels which carry little other cargo. The lumber receipts

are by vessels which for the most part return empty. They amount to vastly more than the grain shipments, the receipts of this year probably requiring more tonnage capacity than 130,000,000 bushels of grain.

The decrease in pig-iron and ore receipts is said to be largely due to the omission of South Chicago harbor from the Chicago district this year. But allowing for all the decreases in freights enumerated, only a very small fraction of the decrease of 1,093,000 tons in clearances is accounted for.

There should have been much more grain tonnage clearing, and nearly enough to balance the decrease in lumber tonnage, which was larger than in any year previous to 1882.

#### Lake Superior Iron Ore.

Shipments of iron ore from the Lake Superior Region up to Nov. 6, when the season of navigation was finally closed, are given as follows, in tons, by the Marquette Mining Journal:

	1883.	1882.	Decrease.	P. c.
From L'Anse.....	66,009	70,543	4,534	6.4
Marquette.....	709,804	944,550	234,746	24.8
“ Escanaba.....	1,426,876	1,735,259	308,383	17.8
St. Ignace.....	59,445	60,637	1,192	1.9
Total.....	2,362,134	2,810,939	548,855	19.5

No more ore will be shipped by lake, but a little will be carried by rail to furnaces in the district which are in blast.

The tonnage over the railroads in the region for this season has been as follows:

	For shipment.	To furnaces.	Total.
Marquette, Houghton & Ontonagon.....	775,813	7,508	783,321
Chicago & Northwestern.....	1,4,6,876	58,447	1,485,323
Detroit, Mackinac & Mar.	59,445	16,788	76,231
Total.....	2,362,134	82,741	2,344,875

The Mining Journal says: "The general summing up will show the total output of the Lake Superior mines the present year to be something over 2,350,000 tons—an increase over any preceding year except 1882."

"The lake shipments of pig metal this year have been as follows: From Marquette, 9,815 tons; from Escanaba, 4,483 tons; from St. Ignace, 3,312 tons; total, 17,610 tons. These figures do not include any iron not carried over the several railroads. We have no return of shipments from either the Martel, Fayette or Menominee furnaces."

#### The Iowa Pool.

It is stated that a contract in relation to the business between Ogden and Chicago has been signed by representatives of the Union Pacific, the Chicago, Milwaukee & St. Paul and the Chicago, Rock Island & Pacific companies. The contract is said to be for 25 years, but its terms have not been made public, beyond the fact that it is not an exclusive contract, but contains provisions for the admission of the other lines between Omaha and Chicago. What action the Northwestern and Burlington roads will take in relation to it is not known.

#### Transportation of High Explosives.

The Union Pacific road has issued the following circular:

"Shipments of Hercules powder, Atlas powder, giant powder or other explosives of which nitro-glycerine forms the basis, when shipped in straight car loads only, minimum weight 20,000 pounds, will hereafter be transported on the following conditions:

"Shipments in less than car loads will not be transported except between local stations in Colorado, Wyoming, Utah, Idaho and Montana, except as stated below:

"1. That, at the cost of shippers, the bottom of the car containing the above-mentioned explosives must be covered to a depth of at least 2 in. with sawdust, to absorb possible leakage.

"2. That the packages containing the explosives shall be so placed and loaded that the cartridges shall always lie on their sides, and not on their ends.

"3. That the cars shall be so marked on both sides and ends that those who shall have charge of them will not do anything ignorantly to incur danger.

"4. In less than car loads this property will be received (when made into cartridges only, and not in bulk under any considerations) on the following conditions:

"Packed in wooden cases, in cartridges, each case holding not exceeding 100 pounds nor less than 5 pounds of explosives, provided that such explosives are packed in dry sawdust, as follows:

"Each cartridge shall be surrounded on all sides with dry sawdust, and all interspaces between such cartridges, and a space of at least one inch between the outer side of such cartridge and the inner side of the case shall be filled with dry sawdust. Each of these cases shall be plainly marked on at least three of its sides with the name of its contents and 'Explosive—Dangerous' so as to be readily seen by those who handle it.

"5. In no case must the caps, fuse, or exploders used for exploding these powders be loaded in the same car with the explosives, and under no circumstance will cars be received if so loaded.

"6. Any and all nitrate or other explosive preparations not in accordance with above specifications (excepting ordinary black powder), will in no case be received for shipment.

"7. All loss or damage to such property that may result either from explosion or from a disregard of any of the above conditions, by shippers or by agents of these lines, must be assumed by the shipper or owner.

"This company reserves the right to refuse to receive high explosives for transportation under any circumstances."

#### OLD AND NEW ROADS.

**Almont, Toledo & Lakeville.**—This company has been organized to build a railroad from Orion, Mich., on the Pontiac, Oxford & Port Austin road, northeast through Lakeville to Almont, the terminus of the Almont Branch of the Port Huron & Northwestern road. The distance is 16 miles.

**Atlantic & Danville.**—Chief Engineer J. W. Rollins, Jr., writes as follows, under date of Dec. 7: "Since your last notice of our track-laying we have laid 7 miles to Otterdam Swamp, Va., which is 4½ miles from Waverly. The grading is completed to that place, and rails are on the way to lay the track by Christmas. The grading force has gone west of Waverly. Work will be stopped from Dec. 22 to Jan. 1, and then a large force will be put on and track completed to Hicksford, in Greenville County, by June, 1884. We had our first fatal accident this week, one of the workmen on the Blackwater trestle being crushed between a timber and a stump, receiving internal injuries which proved fatal."

**Baltimore & Delaware Bay.**—This company has recently been formed by the consolidation of the Kent County and the Smyrna &amp

ft. to standard gauge, and to extend it from its present terminus, just south of the Iowa line, to Kansas City or St. Joseph.

**Detroit, Bay City & Alpena.**—The first time-table of this road, which took effect Dec. 3, shows one train running through and a local accommodation between Tawas and Au Sable. The trains will transfer passengers at Rife River until the high bridge there is done. The stations on the line, with the distances from the junction with the Michigan Central at Alger, Mich., are as follows: Mofet, 4.4 miles; Shearer, 7.0; Prescott, 11.3; Mills, 15.9; Whittemore, 18.9; Emery, 23.6; McIvor, 26.7; Hale, 28.8; Tawas City, 34.0; East Tawas, 35.4; Bristol, 38.4; Au Sable, 47.5 miles.

**East Broad Top.**—It is proposed to build a branch or extension of this road from Orbisonia, Pa., to Burnt Cabins in Fulton County, which is on the line of the new South Pennsylvania road.

**Fargo Southern.**—Work on this road has been suspended for the Winter, with the intention of resuming it early in the Spring. About one-half the grading is done on the line of 120 miles from Fargo, Dak., southward to Ortonville, Minn., and track has been laid from Fargo south to Hickson, 16 miles, and from Ortonville north 10 miles. Two miles of track have also been laid at Wahpeton, Dak., where the company has had serious trouble in securing a crossing of the St. Paul, Minneapolis & Manitoba tracks.

**Florida Southern.**—The rails, which were laid a few weeks ago, on the extension of this road from Gainesville, Fla., to Hague, 11 miles, have been taken up and removed. It is said that the section of the road from Gainesville Northwest has been sold to the Live Oak, Tampa & Charlotte Harbor Co., and that the road-bed, which is graded for 15 miles beyond Hague, will be used as a part of that road.

**Fort Buford & Southeastern.**—This company has been organized to build a railroad from Buford, Dak., to Aberdeen, on the Chicago, Milwaukee & St. Paul road. The office is at Steele, Dakota.

**Green River.**—This is now the name of the company formerly known as the Cincinnati, Green River & Nashville. The road is of 3 ft. gauge, and is now in operation from King's Mountain, Ky., on the Cincinnati Southern road, to Yosemite, a distance of 13 miles. It has lately been extended from the old terminus at Grove to Yosemite, 5 miles.

**Gulf, Colorado & Santa Fe.**—This company will petition Congress for the passage of an act giving it the right to build an extension of the road across the Indian Territory from the Texas to the Kansas line. The company seeks an independent outlet for its business, and the proposed extension is to connect with the Kansas City, Fort Scott & Gulf or the Southern Kansas road in Kansas.

**Jacksonville, Tampa & Key West.**—It is said that work has been resumed on this road south of Palatka, Fla., and that arrangements have been made to complete the line from Jacksonville to Sanford as an extension of the South Florida road.

**Lake Traverse, Sanborn & Carrington.**—This company has been organized to build a railroad from the northern end of Lake Traverse, on the boundary line between Minnesota and Dakota, northwest, crossing the Northern Pacific Railroad at Sanborn, to Carrington, in Foster County, Dak., a distance of 175 miles. A preliminary survey has already been made.

**Lehigh Valley.**—A report has been put in circulation that this company intends to secure a line from Buffalo to Chicago, either by construction or purchase, thus making its road a through line between New York and Chicago.

**Maine Central.**—Work is progressing steadily on this company's new Shore Line Branch, and the rails are reported laid from Brewer, Me., eastward 22 miles, which would take the road through Ellsworth. It is to go to Sullivan, 38 miles from Brewer.

**Memphis & Little Rock.**—A dispatch from Little Rock, Ark., Dec. 5, says: "The suit of Russell Sage against the Memphis & Little Rock Railroad as reorganized was dismissed to-day by motion of the plaintiff. The road and all the property is by order of the Court turned over to the new organization. E. K. Sibley, heretofore Receiver, has been made General Manager, and assumes control dating from Dec. 1. All employees in the different departments will be continued in office."

**Mexican National.**—The following is the present total mileage of the Mexican National system, as given by its secretary, W. W. Nevin, under date of Nov. 24:

Northern General Division.		Miles.
Corpus Christi to Laredo		130.80
Branch to Fort McIntosh		5.21
Mexican Junction to centre of Rio Grande		1.25
Galveston Division		15.00
Laredo (centre of Rio Grande) to Saltillo		235.40
Matamoras Division to near Ebanito		41.60
Total		459.26

Southern General Division.		Miles.
Santiago station, City of Mexico to Morelia		234.88
Acambaro to San Miguel station		76.58
El Salto Division:		
Colonia station, City of Mexico to El Salto		41.80
Nancala to Las Cuartos		7.47
Junction to Stone Quarry		2.17
Ciudad Railroad		3.16
Irolo Railroad		2.35
Zacatecas Division		18.94
At Pacific end		1.12
Manzanillo to Armaria		28.57
Total Southern Division		416.12
Total Northern Division		459.26
Grand total finished		875.38

Of this total 182.26 miles (Corpus Christi to Laredo and branches and the Galveston Division) are in Texas, leaving 693.12 miles completed in Mexico.

**Nashville, Chattanooga & St. Louis.**—The Tennessee Court of Chancery has decided in favor of this company the state's suit to recover taxes on the Nashville & Northwestern Railroad from the time the latter was bought by the Nashville & Chattanooga to the time of the commencement of the suit. Under the terms of its charter the Nashville & Northwestern road was exempt from state taxation for 20 years, and this time has not yet expired. It was claimed on the part of the state, however, that this exemption from state taxation did not pass with the sale of the road, but that the Northwestern road by being sold became taxable property, and the exemption no longer existed. The Court held that as the state was a party to the sale and consented to it the exemption passed with the rest of the franchise.

**New York & New England.**—At the annual meeting, Dec. 11, there was some discussion over the prospects of the road, and the new board of directors was elected substantially as nominated last week, with Mr. Charles P.

Clark as President. No action was taken on the proposition of the New York, Lake Erie & Western Co. to lease the road, except to refer it to the new board for further consideration. The lease of the Rockville road, which is already worked by the company, was formally approved.

It is reported that the New York, New Haven & Hartford Co. has offered to take the road and operate it, the earnings of the two roads to be pooled, and the surplus, after paying all fixed charges and 10 per cent. on the New Haven stock, to be paid over to the New York & New England Co. This report lacks confirmation; although it was referred to by stockholders at the meeting, no official statement was made with regard to it.

**Northern Pacific.**—The Wickes Branch is completed and was opened for traffic Dec. 10. This branch leaves the main line at a point 6 miles east of Helena, Montana, and runs to Wickes, a distance of 20 miles.

Tracklaying is now in progress on the Yakima Branch in Washington Territory, and it is expected that the track will be laid for 25 miles from Ainsworth by the close of the year.

**Northern & Western of New Brunswick.**—Surveys have been completed for this road from Gibson, N. B., to Blackville, and thence to a junction with the Intercolonial road. From Blackville to the Intercolonial two lines have been run, one north of the Miramichi and one south of that river. The surveys have been submitted to the government of the province for decision as to the final location, as the road is to have a subsidy.

**Ogdensburg & Lake Champlain.**—This company's statement for October and the seven months of its fiscal year from April 1 to Oct. 31 is as follows:

	October.	Seven months.
Earnings	\$66,700	\$74,000
Expenses	46,800	44,700
Net earnings	\$19,900	\$29,300
Per c.t. of exps.	70.2	60.4
	71.1	72.9

The decrease in October was due to the burning of the bridge over the St. Regis River, by which traffic was interrupted. For the seven months there was a decrease of \$12,100, or 2.8 per cent., in gross earnings; a decrease of \$16,400, or 5.2 per cent., in expenses, and a gain in net earnings of \$4,300, or 3.7 per cent.

**Ohio Central.**—A dispatch from Columbus, O., Dec. 11, says: "The case of the Central Trust Co., of New York, against the Ohio Central Railroad Co., which was continued from a hearing at Cincinnati on Nov. 15, was argued before Judge Baxter to-day by E. L. Andrews, of New York, for certain of the bondholders, and F. B. Swayne, of Toledo, for the Trust Co. The court room was crowded with interested parties from all parts of the country, and quite a stir was created by Judge Baxter's statement that he had continued this case till now to allow certain bondholders to show cause for the suits against the parties for diverting the funds of the company, and they had not done so. He also explained the action of the court in West Virginia in appointing Thomas R. Sharp as Receiver of the railroad, and stated he had offered to consult with Judge Jackson regarding the matter and that statements to the contrary were false. He said that he would postpone the final action of appointing a Receiver until to-morrow and await Judge Jackson's arrival, but indicated strongly that the permanent appointment of the present Receiver would be made and that this Court, having prior jurisdiction, had authority to place him in possession of the property in West Virginia and declare all the acts of Thomas R. Sharp, the Receiver appointed by Judge Jackson, including the issuing of certificates and other contracts, null and void. It is said that Judge Jackson will not come and that J. E. Martin will to-morrow be appointed permanent Receiver of all the Ohio Central property."

**Ohio & Mississippi.**—Receiver Douglass reports to the Court as follows for November:

Cash on hand, Nov. 1	.....	\$105,108
Receipts from all sources	.....	545,327
Total	.....	\$650,425
Vouchers, pay-rolls, coupons, etc.	.....	529,089

Cash on hand, Dec. 1	.....	\$121,316
The receipts exceeded the disbursements by \$16,238 for the month.		

**Oregon Railway & Navigation Co.**—This company's statement gives the following figures for November and the five months of the fiscal year from July 1 to Nov. 30:

	November	Five months.
Earnings	\$605,500	\$2,811,054
Expenses	319,500	223,701
Net earnings	\$286,000	\$1,426,704
Per cent. of exps.	52.8	47.6
	49.3	45.4

For November the increase in gross earnings was \$135,773, or 28.9 per cent.; in net earnings, \$39,974, or 16.2 per cent. For the five months the increase in earnings was \$344,793, or 13.9 per cent., and the increase in expenses \$265,927, or 23.7 per cent., leaving a gain in net earnings of \$78,866, or 5.9 per cent.

**Pennsylvania.**—The Philadelphia North American says: "Owing to the rapidly increasing passenger traffic of the Pennsylvania Railroad and the anticipated early completion of the Schuylkill Valley and Chestnut Hill branches, it has been decided, it is understood, to increase the accommodations at the Broad street station at an early day. As soon as the weather will permit in the coming spring the work of extending the station southward to Market street will be begun. The southern wall of the present building will be torn out, and the entire block between Fifteenth and Merrick streets to Market will be covered in to the station, and will be used for passenger service. At the same time work will be begun on the old passenger station at Thirty-second street for the purpose of changing it into a general freight depot."

It is reported that this company will anticipate the competition of the South Pennsylvania road by building an extension of its controlled Cumberland Valley line along the route projected many years ago across Southern Pennsylvania to a junction with its Southwest Pennsylvania Branch near Uniontown, on line somewhat less direct than the South Pennsylvania, but much easier to build. This extension would give the company a loop or second line between Harrisburg and Pittsburgh which could be used for through business and which, it is said, would be somewhat shorter than the present main line.

**Pennsylvania, Slatington & New England.**—The personal property of this company has been sold at sheriff's sales in Pennsylvania and New Jersey to meet numerous judgments for wages and other small debts, and work on the road has been entirely stopped. A late dispatch, however, says that the company has succeeded in making a loan sufficient to meet its floating debt and redeem the property, and that arrangements are in progress to resume work.

**Peoria & Northern.**—This company has been organized to build a railroad from Peoria, Ill., to Madison, Wis. It is a revival of a very old project.

**Pittsburgh, Cincinnati & St. Louis.**—The headings from each end of Gould's Tunnel on this road have met about 1,000 ft. from the west end of the tunnel. About 700 ft. of the bench or bottom remain to be taken out to complete the tunnel, which will be about 3,000 ft. long, and is built for double track. Its completion will shorten the road about three miles, besides cutting off a section of the road which is difficult to maintain and hard to work on account of its sharp curves.

**Pittsburgh, Cleveland & Toledo.**—Track is reported all laid on this road from New Castle Junction, Pa., by way of Youngstown and Leavittsburg to Akron, O., a distance of 80 miles. The ballasting is in progress, and it is expected that the road will be open for business early in January. Arrangements are being made to run through trains between Pittsburgh and Cleveland, using the Pittsburgh & Western from Pittsburgh to New Castle Junction, and the Valley Railroad from Akron to Cleveland. The distance between Pittsburgh and Cleveland by this line is 175 miles, or 25 miles more than by the Cleveland & Pittsburgh road.

**St. Louis, Hannibal & Keokuk.**—This company expects to have the extension of its road from Gilmore, Mo., to the Missouri River, 15 miles, completed early next season. South of the Missouri the extension of the Forest Park & Central road from St. Louis, which is to be used by this road, has been graded and is now all ready for the rails. This extension is 16 miles long, and track will be laid on it next season.

**St. Paul, Minneapolis & Manitoba.**—The Sauk Centre & Northern Branch is now completed to Eagle Bend, Minn., 11 miles northward from the late terminus at Brownsville, and 37 miles from the starting-point at Sauk Centre. This branch runs into a lumber district.

**South Florida.**—On the extension of this road to Tampa the track is now laid from Kissimee, Fla., west 20 miles, and work is progressing rapidly. On the western end track has been laid from Tampa east to Plant City, 21 miles, leaving a gap of about 25 miles to be filled.

**South Pennsylvania.**—Work has been begun at the Kittatinny Tunnel on this new road, near Roxbury, Pa., and the first track has been laid there by the contractors. It is, however, only a temporary track, which is to be used in carrying earth and rock from the approaches and the tunnel to a long fill close by. This tunnel will be 4,350 ft. in length, and the Blue Mountain Tunnel, which is only 800 ft. distant on the opposite side of the deep and narrow Gunter's Valley, will be 4,760 ft. long. Arrangements are being made by the contractors to work night and day on the two tunnels, but it will take two years, probably, to complete them.

**Toledo, Cincinnati & St. Louis.**—Mr. John Felt Osgood, Chairman of the bondholders' committee, has issued the following circular to the bondholders:

"The Receiver now being in possession of the entire system of railroad, but acting to your disadvantage under two judges, it is now proposed to consolidate the bonds of the different branches so as to form two systems under one receiver, and so avoid all conflict of opinion between the courts of different jurisdiction, and thus assist the necessary issue of receivers' certificates for the proper operation of the road. Immediate action is peremptory, in order to prevent threatened speedy foreclosure of the different branches, and consequent breaking up of the whole system, which, however, can be prevented by the conciliatory action of a committee, duly empowered to act and decide for the bondholders, and it is therefore proposed that each division shall select three persons, who together shall form a general committee, who shall appoint a sub-committee in whose favor proxies duly empower them to act for you will be solicited at an early date. The proposed consolidation of bonds is necessary in order to effect a sale of receivers' certificates, as they would be entirely unsalable if issued upon the several branches, but such disposal of the first mortgage bonds will not in any way affect the income bonds or common stock."

The plan advised is said to be to consolidate the bonds into two systems, one under each judge, and keep the road under one receiver until the net earnings are sufficient to pay interest on the new issue of first mortgage, when it is proposed to consolidate the two systems into one, and take the road out of the receiver's hands. Then issue the necessary first-mortgage bonds underlying all others, and leave the consolidated bonds and incomes and stock as they are. The incomes on the different divisions would, it is said, be wiped out upon foreclosure and sale under first mortgage of the same division, but the common stock, covering the whole system and branches, reverts upon sale of one branch to the remainder, and cannot be wiped out until the last mile of the road has been sold.

**Topeka, Salina & Western.**—The grading on this road is now completed from Council Grove, Kan., westward to Hope, 20 miles, and track laying has been begun at Council Grove.

**Union Pacific.**—This company's statement for October and the ten months ending Oct. 31 is as follows, the earnings and expenses of the leased lines being included:

	October.	Ten months.
Earnings	\$3,060,409	\$31,109,506
Expenses	1,720,443	1,502,564

Net earnings	\$1,339,966	\$1,606,942
Per cent. of exps.	54.2	48.3

This shows for the ten months a decrease of \$481,308, or 1.9 per cent., in gross earnings, with an increase of \$218,908, or 1.7 per cent., in expenses, the result being a decrease in the net earnings of \$700,211, or 5.8 per cent.

**Wabash, St. Louis & Pacific.**—Surveys are being made for an extension of the Jerseyville Branch of this road from Jersey Landing, Ill., through Alton to Mitchell, on the St. Louis Division. This will complete a second, or loop, line between Springfield and Mitchell.

**Western Union Telegraph.**—At a meeting of the board in New York, Dec. 12, the following statement was presented for the quarter ending Dec. 31, December earnings being estimated:

Surplus, Oct. 1	.....	\$3,841,715
Net earnings for the quarter	.....	1,750,000